Preface

It is the benevolence of Allah All Mighty that I am able to present this book to students. I expect that this book will fulfill needs of students preparing for national and International Test.

In the area of Analytical Reasoning, there are many books available in international market; but in all books, Analytical Reasoning explain in narration form, while it is more difficult than Mathematic for which one cannot understand by read narration explanation. First time, Analytical reasoning explains with the combination of narration, math and columns form which is easiest to understand the Analytical Reasoning.

Many author of Analytical Reasoning's books; advise the reader to solve only three out of four Analytical Game, in International Test (GRE, LSAT) in order to solve Analytical Games in allot time. After reading this book, one will be able to solve all the Analytical Games of any International Test (GRE, LSAT) as well as Local Test (GAT) with in allot time and will success to take the high score.

I am indebted to Mr. Imran Saeed, Rehan Ali, Yasir Jalal, Mian Yousaf, Muhammad Naeem and Mehroz Gul for their collaboration and assistant in writing this book.

I also express my gratitude to all my friends who courage and help me for writing this book.

I request to the curios students to please convey their opinions and suggestions to me so that I may improve this work.

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Part 1

Introduction to Analytical Reasoning

Analytical Reasoning

Analytical reasoning questions (also call analytical game) is a set of questions three to seven based on a given situation such as students standing in a row, or select member for committee from the given candidates, or scheduling the project tasks etc. analytical reasoning question are design to check the one's ability of conceptual learning and how one response to solve a complex situation. Each analytical reasoning set consist of (1) what is and what to do, explaining the actual situation, limitation, related statements and sometime other helpful material, and what is objective or what to do? Analytical reasoning also consist of (2) three to seven questions that check understanding of complex situation and its implications.

For solving the analytical reasoning questions there is no need of high level knowledge of formal logic or mathematics rules, only basic general logic of daily life are use to solve the analytical reasoning question. Vocabulary, skills, conceptual ability and computation or general math ability are very helpful for solving the analytical reasoning problems. If one fail to understand the meaning of single word then he cannot response all questions correctly and similarly one fail to understand the concept of statement then again he cannot response all question correctly.

Below there is an example of analytical game

The administrator of a commercial designing Firm is scheduling exactly six tasks—J, K, L, M, N, and O—for a particular week, Monday through Saturday. Each task can be completed in one full day, and exactly one task will be 'scheduled for each day. The tasks must be scheduled according to the following conditions:

J must be completed sometime before L is completed.

M must be completed on the day immediately before or the day immediately after the day on which O is completed.

N must be completed on Thursday.

1. Which of the following is an acceptable schedule of tasks for the week?

	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
(A)	J	K	M	N	O	L
(B)	J	N	L	O	M	K
(C)	K	O	M	N	L	J
(D)	M	O	J	N	K	L
(E)	O	J	M	N	L	K

2. Any of the following could be completed on Saturday EXCEPT

(A) J
(B) K
(C) L
(D)M
(E) O

3. If K is completed on Wednesday, which of the following could be true?

(A) J is completed on Tuesday.
(B) L is completed on Monday.
(C) L is completed on Friday.
(D) M is completed on Monday.
(E) O is completed on Thursday.

4. If O is completed on Monday, which of the following must be true?
   (A) J is completed sometime before K.
   (B) J is completed sometime before N.
   (C) K is completed sometime before L.
   (D) N is completed sometime before K.
   (E) N is completed sometime before L.

5. If J is completed on Tuesday, which of the following must be true?
   (A) K is completed on Monday.
   (B) L is completed on Thursday.
   (C) L is completed on Saturday.
   (D) M is completed on Wednesday.
   (E) O is completed on Saturday.

6. If M is completed on Tuesday, any of the following could be true EXCEPT:
   (A) J is completed on Monday.
   (B) K is completed on Saturday.
   (C) L is completed on Wednesday.
   (D) L is completed on Friday.
   (E) O is completed on Wednesday.

7. If K is completed on Friday, which of the following must be true?
   (A) J is completed on Monday.
   (B) J is completed on Wednesday.
   (C) L is completed on Saturday.
   (D) M is completed on Monday.
   (E) O is completed on Tuesday.

The above example of analytical game consists of one paragraph, some limitation and seven questions. First paragraph explain what is actual problem or situation and what have to accomplish. In second part, all constrains to achieve the target are explain. The third part consists of seven questions. Each question also consist one or more specific condition and response to ask what happen in next or how task will complete.

Components of Analytical Game

There is three component of Analytical Game

1. Situation
2. Limitations or Rules
3. Questions

1. Situation

The situation part consists of circumstance of problem and what to achieve.
This part also include resources to use for complete the objective.
In above example,

The administrator of a commercial designing Firm is scheduling exactly six tasks—J, K, L, M, N, and O—for a particular week, Monday through Saturday. Each task can be completed in one full day, and exactly one task will be 'scheduled for each day. The tasks must be scheduled according to the following conditions:

First it explains the circumstance as one administrator arranging the six tasks. The objective is arranging each task on exactly one day of the week.

2. Limitations or Rules

The most important component of Analytical Game is Limitation or Rules which explaining constrains for accomplish the objective.
In above example, following are the rules,

J must be completed sometime before L is completed.

M must be completed on the day immediately before or the day immediately after the day on which O is completed.

N must be completed on Thursday

Rules are backbone in order to solve the analytical game. If one fails to understand the single Rule then he cannot response most question correctly. For solving the each question, one needs to use these Rules correctly. Basically one learns "how to use rules' it mean he polishes or have good conceptual ability.

Type of Rules

- Basic Rules
- Relationship Rules
- New Rules

Basic Rules

The Rule which has minimum possibility of occurrence is basic Rules.
In above example, the third Rules as

"N must be completed on Thursday"

Now task "N" has only one possibility of occurrence. Then third Rule is basic Rule, because it has minimum possibility of chance.

Let, "N must be completed on Thursday or Friday'

Now task "N" has only two possibility of occurrence, again it is Basic Rule because it has only two possibility of chance.

Relationship Rules

The Rule which describe some relation between entities is called relationship Rule. In above example, the first and the second Rules as

"J must completed sometime before L is completed"
"M must be completed on the day immediately before or the day immediately after the day on which O is completed"

First Rule, described relation between J and L, as J must completed before L or J < L. Now if one knows setting of L or J then he can determine the setting for other remaining task easily.
Second Rule also described relation between M and O, now again if one knows setting for of M or O task then he can determine the setting for other remaining task. For example, if M completed on Tuesday then O must completed on Monday or Wednesday.

New Rule

Rule which is made by combination of given or existing Rules is called New Rules. Sometime, given Rules generate or explain further limitations that further limitation is a New Rule.

Types of Analytical Games

There are three major types of analytical games

- **Ordering Game**

Ordering analytical games require the examinee to place the "person" provided in the set of conditions in a particular sequence. The ordering game could require the examinee to place tasks, boys, or things in sequence.

- **Grouping Game**

Grouping analytical games require the examinee to select a group of person, boy, girl, teacher etc according to the set of conditions provide.

- **Networking Game**

Networking analytical games require the examinee to draw a connection or link between cities, computers, countries etc; according to the given relation.

Analytical Symbols

In order to solve analytical games easily and within time allot, one must use maximum symbols and other notations as possible.

- Always use only "Capital letter" to represent the name of any persons, colors, trees, cities etc.
- Try to use number instead of whole name for series like consecutive days, month.

  For example. Days Mon Tues Wed Thur Fri Sat

  Numbering 1 2 3 4 5 6
- In below table, there are symbols which are mostly use in analytical games.

Symbols	Meaning	Expression	How to read
$\rightarrow$	If – then--	A $\rightarrow$ B	If A select for group then B must be select with A. and if B select for a group then A may be select but not compulsory for selection.
$\leftrightarrow$ or =	If --- then---	A $\leftrightarrow$ B Or A = B	If A select for a group then B must be select with A and if B select for a group then A must be select with B. If A cannot join any specific group then B also cannot join that group and similarly if B cannot join any specific group then A also cannot join that group. A = B never shown that they are equal in value but only shown that they are in same group.
$\neq$	Not with Or Not	A $\neq$ B A $\neq$ 5	If A select for a group then B cannot select for that group and similarly if B select for a group then A cannot select for that group. A $\neq$ 5 mean A cannot occupy the fifth position when arrange the A in linear analytical games.
/	Or	A $\rightarrow$ B/C	If A select for a group then one of B or C must be select. Sometime both B and C can select with A and sometime only one of B and C can

			select with A, depending on the Rule condition
+	Add	A = B + 1	This notation only use on Linear or Sequence Analytical Games. It means A will occupy position immediately after B position.
±	Add or Subtract	A = B ± 1	It mean A will occupy position immediately after or immediately before the position which is occupy by B.
<	On lower position	A < B	It mean, A occupy lower position then the position which is occupy by B
A_G	If—in—then----	$A_G \rightarrow B_R$	Here small G show Green team and small R show Red team. And $A_G \rightarrow B_R$, it mean if A select for Green team than B must select for Red team.
&	And	(A & B) $\rightarrow$ C	It mean, if both A and B select for one group then C also join the same group.

Analytical Logics

1 If A select then B must be select. A $\rightarrow$ B,

For Example, if there is raining then definitely there are clouds, because raining cannot be start without clouds. So there are many case in which if one come to know existence of one element then existence of second element is also prove. Like if there is raining then could also exist. But if there are clouds then raining may be fall but not compulsory. So,

If A select then B must select, but if B select then A may be select or not.
And if one come to know that there are no clouds then definitely there is no raining. So, If B cannot select then A cannot select.

- If A select then B must be select. A $\rightarrow$ B
- If B select then A may be select or not. B $\rightarrow$ A or not select.
- If B not select then A cannot select. ~B $\rightarrow$ ~A

Symbol "~" shown for "NOT".

2. If A select then B cannot select. A $\rightarrow$ ~B

Now if B select then A also cannot select. B $\rightarrow$ ~A
Then we simply write as A $\neq$ B
Both A and B cannot join same group.

3. If A select then B must select. A $\rightarrow$ B
And if B select then A must select. B $\rightarrow$ A
Then A = B
Both A and B must join same group.

4.

- If A select then B must select. $A \rightarrow B$
- If B select then C cannot select. $B \rightarrow \sim C$
- Then both A and C cannot join same group. $A \neq C$
  See below for detail.

Possibility	Group			True/False
1	A	B	C	False as statement 2
2	A	C		False as statement 1
3	B	C		False as statement 2
4	A	B		True
5	C			True

In above all the possibility in which both A and C join the group are wrong, so both A and C cannot join the group. Or $A \neq C$

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- If A select then B must select. $A \rightarrow B$
- If B select then C must select. $B \rightarrow C$
- Then if A and C must select. $A \rightarrow C$
  See below for detail.

Possibility	Group			True/False
1	A	B	C	True
2	A	C		False as statement 1
3	B	C		True
4	A	B		False as statement 2
5	C			True

In above all the possibility in which A select and C not join with A are wrong, so if A select then C must select with A. Or $A = C$

6

- For a group only two member are remaining for group completion and two member will be select from total three available(A, B, C) person.
- If A select then B must select.
- Then B must be select and one of A and C can select for that group.

See below for detail.

Group Remaining Members = 2 Available Persons = A, B, C

Group Remaining Member		True/False
1	2	
A	B	True
A	C	False as statement 2
B	C	True

In above all the possibility in which B not select are wrong. So in above case B must be select.

7

- For a group only two member are remaining for group completion and two member will be select from total three available(A, B, C) person.
- If A select then B must select and if B select then A must select.
- Then A and B must be select and C cannot select for that group.

See below for detail.

Group Remaining Members = 2 Available Persons = A, B, C

Group Remaining Member		True/False
1	2	
A	B	True
A	C	False as statement 2
B	C	False as statement 2

In above all the possibility in which both A and B not select are wrong. So in above case both A and B must be select and C cannot select.

8

- For a group only two member are remaining for group completion and two member will be select from total three available(A, B, C) person.
- If A select then B cannot select.
- Then C must select and one of A and B will be select for that group.

See below for detail.

Group Remaining Members = 2 Available Persons = A, B, C

Group Remaining Member		True/False
1	2	
A	B	False as statement 2
A	C	True
B	C	True

In above all the possibility in which C not select are wrong. So in above case C must select and one of A and B can select but not both.

9

- For a group only one member is remaining for group completion and one member will be select from total three available(A, B, C) person.
- If A select then B must select and if B select then A must select.
- Then C must select and none of A and B will be select for that group.

See below for detail.

Group Remaining Members = 1 Available Persons = A, B, C

Group Remaining Member		True/False
1		
A		False as statement 2
B		False as statement 2
C		True
A	B	False as statement 1
C	A	False as statement 1

In above all the possibility in which C not select alone are wrong, so in above case C must select alone and none of A and B select.

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- For a group only one member is remaining for group completion and one member will be select from total three available(A, B, C) person.
- If A select then B must select.
- Then A cannot select for group and one of B and C can select for group.

See below for detail.

Group Remaining Members = 1 Available Persons = A, B, C

Group Remaining Member		True/False
1		
A		False as statement 2
B		True
C		True
A	B	False as statement 1
C	A	False as statement 1

In above all the possibility in which A select alone are wrong, so in above case A not select for group and one of B and C will be select.

11. If A select then B or C must select but not both. $A \rightarrow B/C$

Then B cannot select with C. $B \neq C$

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- On position, if there is only single position is remaining.
- A must occupy position immediately after the B. $A = B + 1$
- Then B and A both cannot occupy that single position.

See below for detail.

Let there is five consecutive chairs, and C must sit on fourth chair. $C = 4$

And A must sit on chair after immediately chair on which B sit. $A = B + 1$

Options	Chairs 1	2	3	4	5	True/False
1			B	C	A	False as statement 2
2			A	C	B	False as statement 2
3	A	B		C		True

In above all the options in which A or B occupy single remaining fifth position are wrong, so in above case A or B not occupy that single remaining position.

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- On position, if there are two consecutive positions are remaining.
- A cannot occupy position immediately after the position which is occupy by B. or $A \neq B + 1$
- Then only one of A and B occupy one position of that two consecutive position.

14

- If A occupy position which is immediately after or before the position on which occupy by B. or $A = B \pm 1$
- And C occupy position which is immediately after or before the position on which occupy by B. or $C = B \pm 1$

- Then A = C ± 2
- And A, B, C cannot occupy any single position
- And A, B, C cannot occupy any double position

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- A must occupy position immediately after the position which is occupy by B.
- Then A cannot occupy last position.
- And B cannot occupy first position.

Or

If A = B +1
Then A ≠ n (last position)
And B ≠ 1 (First position)

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- A must occupy position immediately after the position which is occupy by B.
- C occupies forth position.
- Then A cannot occupy third position.
- And B cannot occupy fifth position.

Or

If A = B + 1 and C = 4
Then A ≠ 3 and B ≠ 5

17 If A < B and B < C
Then A < C
See below for detail

Options	1	2	3	4	5	True/False
1	A	B	C			True
2	B	C	A			False because A < B
3	C	A	B			False because B < C

In above all the options in which A occupy higher position than the position which occupy by C are wrong, So in above case A must occupy lower position than the position which is occupy by C. or A < C

18 If A < B and A = C ± 1
Then C < B
See below for detail

Options	1	2	3	4	5	True/False
1	A	B	C			False because A = C ± 1
2	B	C	A			False because A < B
3	C	A	B			True
4	A	C	B			True

In above all the options in which C occupy higher position than the position which occupy by B are wrong, So in above case C must occupy lower position than the position which is occupy by B. or C < B

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- A occupy lower position then the position which is occupy by B, or A $< B$
- Then A cannot occupy last position.
- And B cannot occupy first position.

Or

If $A < B$
Then $A \neq n$ (last position)
And $B \neq 1$ (First position)

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- A occupy lower position then the position which is occupy by B, or A $< B$
- C occupies forth position.
- Then A cannot occupy third position.
- And B cannot occupy fifth position.

Or

If $A < B$ and $C = 4$
Then $A \neq 3$ and $B \neq 5$

Most Important Types of Questions and How to Solve

1. Acceptable/ Possible Schedule or Group

In this question, five options are given of possible group or schedule and asking about select one option which is correct. For example, the first question of above analytical game,

1. Which of the following is an acceptable schedule of tasks for the week?

	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
(A)	J	K	M	N	O	L
(B)	J	N	L	O	M	K
(C)	K	O	M	N	L	J
(D)	M	O	J	N	K	L
(E)	O	J	M	N	L	K

For solution of this question, one must take the Basic Rule and search which option not follow Basic Rule and cut the option or options which not follow Basic Rule. Now take another Rule and search which remaining option or options not follow the Rule and cross the option which not follow Rule. In similar way check all the Rules unless only one option remains and that option will be correct answer.

2. Must be True.

In this type of question, question consist one condition and then asking what must be true, this is most asking question. For example, question No 4, 5 and 7.

4.If O is completed on Monday, which of the following must be true?

(E) J is completed sometime before K.
(F) J is completed sometime before N.
(G) K is completed sometime before L.
(H) N is completed sometime before K.
(E) N is completed sometime before L.

If O is completed on Monday, is question condition.

For solution of this type of question, mostly student look each option and decide either it is true or not, but this way is difficult and time consuming. One must make some conclusion and then look the options and select one that is according to conclusion. How conclusion made? First draw group or schedule, now take the question condition, then see the Rule which is related to question condition and try to complete group or schedule.

3. Could be True

This type of question is similar with second type of question only with little bit difference that drawing conclusion may have more than one options. For Example,

3. If K is completed on Wednesday, which of the following could be true?

(A) J is completed on Tuesday.
(B) L is completed on Monday.
(C) L is completed on Friday.
(D) M is completed on Monday.
(E) O is completed on Thursday.

Same solution as second type of question.

4. New Rule

This type of question does not consist of any condition and just asking "what must be true" For example,

2. Any of the following could be completed on Saturday EXCEPT

(A) J
(B) K
(C) L
(D)M
(E) O

For solution of this type of question, Make new relationship by combining two or more Relationship rules, and sometime New Rule can be make by combining the Basic Rule and Relationship Rule.

How to answer the Question

1st Step Mostly question consist one condition regarding one element (person, boy, student, box, tree, chair etc),

2nd Step Now look the Relationship Rule which is related to given element and then finding the position of second element.

3rd Step Now look the Relationship Rule which is related to second element and then finding the position of third element.

In this way, you will be able to draw a clear conclusion and then see the question option and select one which is relevant to conclusion.

For Example,

4. If O is completed on Monday, which of the following must be true?

(A) J is completed sometime before K.
(B) J is completed sometime before N.
(C) K is completed sometime before L.
(D) N is completed sometime before K.
(E) N is completed sometime before L.

Here, O = 1 is question condition, now see Basic and Relationship Rule which is related to O

1	2	3	4	5	6
O					

As Rule III, N must complete on Thursday, so

1	2	3	4	5	6
O			N		

As Rule II, M = O ± 1, now O = 1, then M = 0 or 2, M ≠ 0, so M must at Tuesday, then

1	2	3	4	5	6
O	M		N		

Now take Rule I, J < L, and Remaining K, there are three options

	1	2	3	4	5	6
Option 1	O	M	J	N	L	K
Option 2	O	M	J	N	K	L
Option 3	O	M	K	N	J	L

Now check the question options and select one which is correctly describe above conclusion

Choice E is correct, as N always completed before L in all three options.

Part 2

Types of Analytical Games

Types of Analytical Games

There are three most common analytical games

1. Ordering Game

Ordering analytical games require the examinee to place the "person" provided in the set of conditions in a particular sequence. The ordering game could require the examinee to place tasks, boys, or things in sequence.

Two examples of ordering analytical games are given below;

Example No 1

Seven Trains—R, S, T, U, V, W, and X—-are to be scheduled for departure, one at a time on the hour, from 6:00 a.m. until 12 noon The schedule must conform to the following requirements:

Train R must depart at 6:00 a.m.
Train V must depart later than Train T, and also later than Train S.
Trains U, W, and X must depart on consecutive hours in that order.

1. If Train X is scheduled to depart at noon, Train V must be scheduled to depart at

(A) 7:00 a.m. (B) 8:00 a.m. (C) 10:00 a.m.
(D) 11:00 a.m. (E) 12 noon

2. If Trains T and U are scheduled to depart at 8:00 a.m. and 9:00 a.m., respectively, Train S must be scheduled to depart at

(A) 6:00 a.m. (B) 7:00 a.m. (C) 10:00 a.m.
(D) 11:00 a.m. (E) 12 noon

3. Which of the following lists three Trains in a sequence, from first to last, in which they could be scheduled to depart consecutively?

(A) R, U, T (B) S, T, W
(C) U, V, W (D) W, X, T
(E) W. X, U

4. If Train W is scheduled to depart at 11:00 a.m., Train V must be scheduled to depart at
(A) 7:00 a.m. (B) 8:00 a.m. (C) 9:00 a.m.
(D) 10:00 a.m. (E) 11:00 a.m.

5. Which of the following must be true about the scheduled order of the Trains?

(A) Train T is scheduled to depart later than Train S.
(B) Train U is scheduled to depart later than Train T.
(C) Train V is scheduled to depart later than Train U.
(D) Train W is scheduled to depart later than Train V.
(E) Train X is scheduled to depart later than Train W.

6. What is the latest hour at which Train S can be scheduled to depart?

(A) 7:00 a.m. (B) 8:00 a.m. (C) 9:00 a.m.
(D) 10:00 a.m. (E) 11:00 a.m.

Solution

Trains	R	S	T	U	V	W	X
Numbering	1	2	3	4	5	6	7
Time	6:00am	7:00	8:00	9:00	10:00	11:00	12:00noon

Rules

Rule I, Train R = 1
Rule II, Train V > T, S
Rule III, Train U, W and X depart consecutively in same order

Question No 1

	1	2	3	4	5	6	7
As question and as Rule I,	R			X			
As Rule III,	R	U	W	X			
Remaining as Rule II,	R	S	T	V	S	T	V

So, Choice E is correct.

Question No 2

	1	2	3	4	5	6	7
As question and as Rule I,	R		T	U			
As Rule III,	R		T	U	W	X	
Remaining as Rule II,	R	S	T	U	W	X	V

So, Choice B is correct.

Question No 3

1st Step Check Rule III A, B, C, E is wrong

So, Choice D is correct.

Question No 4

	1	2	3	4	5	6	7
As question and as Rule I,	R					W	
As Rule III,	R				U	W	X
Remaining as Rule II,	R	S	T	V	U	W	X

So, Choice C is correct.

Question No 5

As Rule III, Choice E is correct.

Question No 6

As Rule II, Train S < V, so Train S cannot be departs at 12:00noon. Then it will depart at 11:00a.m. as latest hour.
So, Choice E is correct.

Example No 2

In order to gain full course credit for him tour of a foreign city. Zeeshan must visit exactly seven famous places of interest-—a foreign office, a river, the hill, a library, a mosque, a club, and a theater. Any tour plan that Zeeshan devises will allow him to keep to him timetable and is thus acceptable, except that he must plan his tour to conform with the following conditions:

The foreign office must be one of the first three places visited.
The hill must be visited immediately before the river.
The library can be neither the first nor the last place visited.
The mosque must be either the first or the last place visited.
The club must be one of the last three places visited.

1. Which of the following is an acceptable order in which Zeeshan may tour all seven places of interest?

   (A) Foreign office, theater, hill, library, club, river, and mosque
   (B) Hill, river, foreign office, library, theater, club, and mosque
   (C) Library, theater, foreign office, hill, river, mosque, and club
   (D) Mosque, foreign office, club, hill, library. river, and theater
   (E) Mosque, library, hill, river, foreign office, club, and theater

2. If, on him tour. Zeeshan visits the theater, the library, and the foreign office, one directly after the other in the order given, he must visit the river

   (A) second
   (B) third
   (C) fourth
   (D) fifth
   (E) sixth

3. If, Zeeshan begins him tour at the hill, which of the following could be the fourth place of interest he visits on the tour?

   (A) The foreign office
   (B) The river
   (C) The library
   (D) The mosque
   (E) The club

4. If Zeeshan is to visit the club sixth, he could visit the hill in any of the following positions on him tour EXCEPT

   (A) first
   (B) second
   (C) third
   (D) fourth
   (E) fifth

5. If Zeeshan visits exactly one place of interest between him visits to the foreign office and the club, that place must be either the

   (A) river or the hill
   (B) river or the theater
   (C) hill or the mosque
   (D) library or the mosque
   (E) library or the theater

Solution

Famous Places F, R, H, L, M, C, T

Rules

Rule I, $F \leq 3$
Rule II, $H = R - 1$
Rule III, $L \neq 1, 7$
Rule IV, $M = 1/7$
Rule V, $C \geq 5$

Question No 1

1st Step	Check Rule IV	C is wrong
2nd Step	Check Rule I	E is wrong
3rd Step	Check Rule II	A, D is wrong

So, Choice B is correct.

Question No 2

	1	2	3	4	5	6	7
As question	T	L	F				
As Rule IV, M =1/7, M ≠ 1, so	T	L	F				M
As Rule V, C ≥ 5 then							
Option 1	T	L	F			C	M
Option 2	T	L	F		C		M
As Rule II, H = R – 1, then Option 2 is wrong, then	T	L	F	H	R	C	M
Choice D is correct.							

Question No 3

	1	2	3	4	5	6	7
As question and Rule II,	H	R					
As Rule I,	H	R	F				
As Rule IV, M = 1/7, so	H	R	F				M
As Rule V, C ≠ 4							
Remaining T and L can be fourth	H	R	F	T/L	L/T	C	M
Check the choices,							
Choice C is correct,							

Question No 4

	1	2	3	4	5	6	7
As question						C	
As Rule II, H = R – 1, then H ≠ 5,							
If H = 5 then R = 6 which is wrong							
So, Choice E is correct.							

Question No 5

As question F must be 3rd and C must be 5th Place of visit.

	1	2	3	4	5	6	7
As question			F		C		
H & R ≠ 4, as Rule II, H = R – 1,							
As Rule IV, M ≠ 4							

Then remaining L or T must be fourth, and then Choice E is correct.

2. Grouping Game

Grouping analytical games require the examinee to select a group of person, boy, girl, teacher etc according to the set of conditions provide.

Two examples of grouping analytical games are given below;

Example No 3

From time to time, the President of a company appoints planning Boards, each consisting of exactly three members. Eligible for appointment are three executives from Marketing—R, S, and T—and three executives from Finance—U, V, and W. Any given Board is subject to the following restrictions on appointments:

At least one member must be from Marketing, and at least one member must be from Finance.
If R is appointed, S cannot be appointed.
Neither T nor V can be appointed unless the other is appointed also.
If U is appointed, W must also be appointed.

1. Which of the following is an acceptable Board?

(A) R, T and W (B) S, V, and W (C) T. U, and V
(D) T, V, and W (E) U, V, and W

2. If appointees from Marketing are in the majority on a Board, that Board must include
(A) R (B) S (C) U (D) V (E) W

3. If appointees from Finance are in the majority on a Board, that Board must include
(A) R (B) S (C) U (D) V (E) W

4. If R is appointed to the same Board as W, which of the following will be true of that Board?

(A) Appointees from Marketing are in the majority.
(B) Appointees from Finance are in the majority.
(C) S is a Board member.
(D) V is a Board member.
(E) U is not a Board member.

5. If the restrictions on appointments apply also to a four-member Board appointed from the same group of executives, which of the following will be true?

(A) If R is appointed, W must also be appointed.
(B) If S is appointed, U must also be appointed.
(C) If T is appointed, R must also be appointed.
(D) If V is appointed, S must also be appointed.
(E) If W is appointed, U must also be appointed.

Solution

Marketing Executive	R	S	T
Finance Executive	U	V	W

Exactly three member board

Rules

Rule I, at least one member from Marketing and at least one member from Finance
Rule II, $R \neq S$
Rule III, $T = V$
Rule IV, $U \rightarrow W$

Question No 1

1st Step	Check Rule III	A, B, E is wrong
2nd Step	Check Rule IV	C is wrong

So, Choice D is correct.

Question No 2

	Option 1			Option 2		
As question and Rule II, then	R			S		
And remaining Marketing Executive,	R	T		S	T	
As Rule III,	R	T	V	S	T	V

So, Choice D is correct.

Question No 3

	Option 1		Option 2		
As question and Rule IV, then	U	W	V	W	
As Rule III, T = V, so	U	W	V	W	T

Check the choices,
Choice E is correct.

Question No 4

	Board		
As question,	R	W	
As Rule II, R ≠ S, so S cannot be appoint,			
As Rule III, T = V, so both T and V cannot be appoint			
Then remaining	R	W	U

So, Choice B is correct.

Question No 5

Take each choice and make the board according to the Rules

Choice	True/False	Option 1			Option 2
A	True	R			
As Rule II, remaining		R	T		
As Rule III, T = V, so		R	T	V	
As Rule IV, U cannot be In board, so	R	T	V	W	

Choice A is correct answer, as If R appoint then W must be appoint.

Example No 4

The editors of a journal that publishes three issues a year will devote the upcoming first, second, and third issues— in that order—exclusively to essays written by seven writers: R, S, T, U, V, W, and X. Each of the seven writers will have at least one essay published, but some may have more than one essay published. The following restrictions apply to the publication of their essays:

If an essay by R appears in an issue, then an essay by S must also appear in that issue.
If an essay by U appears in an issue, then an essay by W must appear in the immediately preceding issue.
An essay by W cannot be published in an issue that contains an essay by X.
No writer may publish in each of two consecutively published issues or twice in the same issue.
Each of the issues being prepared must contain at least two essays.
The seven writers' essays can only appear in the upcoming first, second, and third issues.

1. The first issue of the journal can consist exclusively of essays by which of the following groups of writers?

(A) R and T
(B) U and W
(C) R, W. and X
(D) T, V, and W
(E) R, S, V, W, and X

2. If the first issue consists exclusively of essays by R and S, then the second issue can consist exclusively of essays by which of the following groups of writers?

(A) T and V
(B) T and W
(C) U and X
(D) R, S, and X
(E) T, W, and X

3. Which of the following writers CANNOT contribute to the first issue of the journal?

(A) T
(B) U
(C) V
(D) W
(E) X

4. If the first issue consists exclusively of essays by S, T, and X, then the third issue must contain an essay by which of the following writers?

(A) S
(B) T
(C) V
(D) W
(E) X

5. If the third issue consists exclusively of essays by S, T, and U, then the second issue must have consisted of essays by which of the following groups of writers?

(A) R and V
(B) R and X
(C) S and W
(D) V and W
(E) V and X

Solution

	1		2		3		
	First Issue		Second Issue		Third Issue		
Writer's Essay	R	S	T	U	V	W	X

At least one essay of one writer must be published

Rules

Rule I, $R \rightarrow S$
Rule II, $W = U - 1$
Rule III, $W \neq X$
Rule IV, No writer may publish two essay in same Issue or Two consecutive Issue
Rule V, Each issue must consist at least two essays

New Rule

As Rule II & III, $W = U - 1$ and $W \neq X$ then $X \neq U - 1$

Question No 1

1st Step	Check Rule I	A is wrong
2nd Step	Check Rule II	B is wrong
3rd Step	Check Rule III	C, E is wrong

So, Choice D is correct.

Question No 2

	First Issue		Second Issue	Third Issue
As question,	R	S		
As Rule IV, R & S cannot publish In Second Issue				
As Rule II, $W = U - 1$, then W must Publish in Second Issue, then	R	S	W	U
As Rule III, $W \neq X$ Then remaining	R	S	W T	U

Check the choices, Choice B is correct.

Question No 3

As Rule II, W = U – 1, then U ≠ 1
So, Choice B is correct answer.

Question No 4

	First Issue	Second Issue	Third Issue
As question,	S, T, X		
Then W must be publish in Second Issue as Rule II,	S, T, X	W	U
R ≠ Second Issue, because as Rule I, R → S, and S cannot publish in Second Issue as Rule IV, then	S, T, X	W	U, R, S
Check the Choices, Choice A is correct.			

Question No 5

	First Issue	Second Issue	Third Issue
As question,			S, T, U
As Rule II, W = U – 1, so		W	S, T, U
R ≠ Second Issue, because as Rule I, R → S, and S cannot publish in Second Issue as Rule IV, then	R, S	W	S,T, U
As Rule III, W ≠ X, so X ≠ Second Issue			
Then remaining as IV, Choice D is correct.	R, S	W, V	S, T, U

3. Networking Game

Networking analytical games require the examinee to draw a connection or link between cities, computers, countries etc; according to the given relation.
Below, there are two example of networking games;

Example No 5

A network system has exactly four message exchanges computers: R, S, T, and U. Messages travel from one computer directly to another computer only as follows:

From R to S, but not vice versa
From R to T, but not vice versa
From R to U, and vice versa
From S to T, and vice versa
From S to U, but not vice versa
From U to T, but not vice versa

A single direct path going in one direction from one computer to another is called a leg.

1. If a message is to travel from T to S over as few legs as possible, it must travel in which of the following ways?

(A) Directly from T to S
(B) Via R but no other computer
(C) Via U but no other computer
(D) Via R and U, in that order
(E) Via U and R, in that order

2. Which of the following is a complete and accurate list of computers to which a message can be sent along exactly one leg from U?

(A) R
(B) T
(C) R, T
(D) S, T
(E) R, S, T

3. Which of the following sequences of legs is a path over which a message could travel from S back to S ?

(A) From S to R, from R to S
(B) From S to T, from T to R, from R to U, from U to S
(C) From S to T, from T to U, from U to R, from R to S
(D) From S to U, from U to R, from R to T, from T to S
(E) From S to U. from U to T, from Y to R, from R to S

4. If all of the legs in the system are equal in length, and if messages always travel along the shortest possible path, then the longest path any message travels in the system is the path from

(A) S to R
(B) T to R
(C) T to U
(D) U to R
(E) U to S

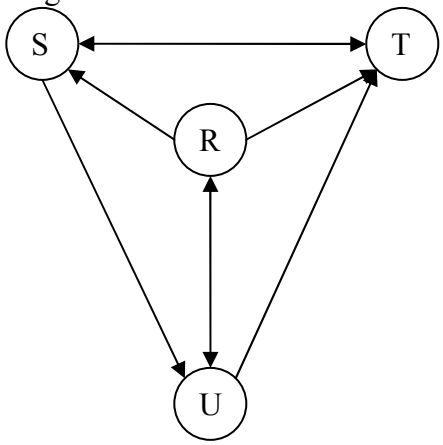
5. If certain restricted messages cannot travel any further than one leg, and if an addition of one leg is to be made to the system so that such restricted messages can be sent from each computer to at least two others and also be received by each computer from at least two others, then that addition must be from

(A) S to R
(B) T to R
(C) T to U
(D) U to R
(E) U to S

Solution

Computers	R	S	T	U
One Way	R $\rightarrow$ S and T		S $\rightarrow$ U	U $\rightarrow$ T
Two Way	R $\leftrightarrow$ U	S $\leftrightarrow$ T		

Draw the following diagram according to the Rules, and then give the answer by looking the diagram.



Question No 1

Directly from T to S,

So Choice A is correct.

Question No 2

As only U → T and U → R

So, R and T

Choice C is correct.

Question No 3

Option 1 S →U →R →S

Option 2 S →U →R →T →S

Check the choices,

Choice D is correct.

Question No 4

Longest path is

T →S →U →R

Check the choices,

Choice B is correct.

Question No 5

As longest path is from T to R

So, it must be made in path of T to R. Choice B is correct.

Example No 6

A map representing cities F, G, H, I, J, and K. is to be drawn. Neighboring cities cannot be the same color on the map.

The only cities neighboring to each other are as follows:

F, G, I and J are each neighboring to H.
I is neighboring to J.
F and G are each neighboring to K.

1. Which of the following is a pair of cities that must be different in color from each other?

(A) F and I (B) G and I (C) G and K
(D)I and K (E) J and K

2. If I is the same color as K, then it must be true that

(A) F ii the same color as J
(B) G is the same color as I
(C) I is the same color as J
(D) G is a different color from any other city
(E) H is a different color from any other city

3. Which of the following is a pair of cities that can be the same color as each other?

(A) F and G (B) G and H (C) H and I
(D)H and J (E) I and J

4. Which of the following cities can be the same color as H?

(A) F
(B) G
(C) I
(D) J
(E) K

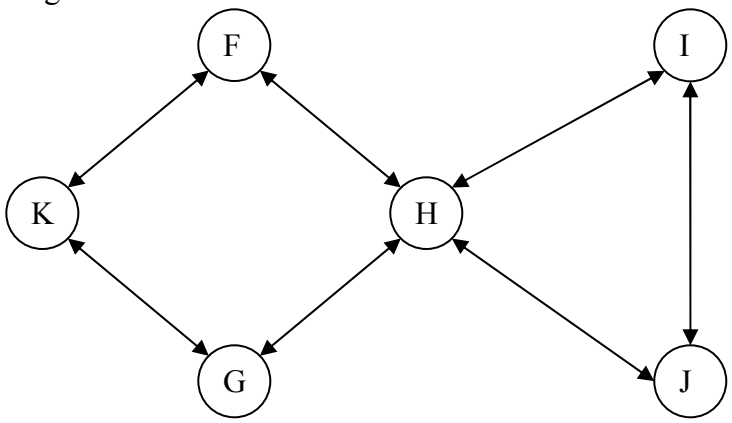
5. If the fewest possible colors are Used and one of the cities is the only one of a certain color that city could be

(A) H, but not any of the other cities
(B) K, but not any of the other cities
(C) F or G, but not any of the other cities
(D) H or I or J, but not any of the other cities
(E) H or J or K, but not any of the other cities

Solution

Cities	F	G	H	I	J	K
Rule I,		H $\Leftrightarrow$ F, G, I, J				
Rule II,		I $\Leftrightarrow$ J				
Rule III,		K $\Leftrightarrow$ F, G				

Draw the following diagram according to the Rules, and then give the answer by looking the diagram.



Question No 8

Choice C is correct, as G and K are neighbor with each other.

Question No 9

Choice	Possibility
A	May be but not necessary
B	Not true as I = K and G $\Leftrightarrow$ K
C	Not true because two neighbor city
D	Not true because G can be same color of J and F
E	Yes it must be true

So, Choice E is correct.

Question No 10

Same color can be of K with H, I and J
Same color can be of G with F, I and J
Check the choices,
Choice A is correct.

Question No 11

As K is only city which is not connected with H, so H and K can be same color
So, Choice E is correct.

Question No 12

	Same color can be
	H and K
	K with I and J
	F with G, I and J
	G with F, I, J

Choice	Possibility
A	Not true because K and H can be same color
B	Not true, because K with H, I, and J can be same color
C	Not true, because F and G can be same color
D	Yes, H, I and J must be different color
E	Not true because K and J may be same color

So, Choice D is correct.

Part 3

Tests

Test No 1

Question No 1- 5

A Multinational Company is assigning each of six foreign office to its officers—Fareed, Ghulam, Hamid. Imtiaz, Junaid, and Kabeer—to offices. There are four foreign office L and M are located in countries with hot area, whereas offices R and S are located in countries with cold areas. The officers must be assigned according to the following rules:

Each foreign office must have at least one of the officers assigned to it.
At least one foreign office in a cold area must have at least two officers assigned to it.
Ghulam cannot be assigned to the same foreign office as Kabeer.
Imtiaz must be assigned to a foreign office in a hot area.
Junaid must be assigned to a foreign office in a cold area.

1. Which of the following is an acceptable assignment of the officers to the offices?

	L	M	R	S
(A)	FAREED, GHULAM	IMTIAZ, KABEER	HAMID	JUNAID
(B)	GHULAM, KABEER	IMTIAZ	JUNAID	FAREED, HAMID
(C)	GHULAM	FAREED, IMTIAZ	KABEER	JUNAID, HAMID
(D)	JUNAID	GHULAM, IMTIAZ	HAMID	FAREED, KABEER
(E)	KABEER	FAREED, HAMID	IMTIAZ	GHULAM, JUNAID

2. Which of the following must be assigned either to foreign office L or to foreign office M ?
(A) Fareed (B) Ghulam (C) Hamid (D) Imtiaz (E) Kabeer

3. Which of the following CANNOT be true?
(A) One worker is assigned to L.
(B) Two officers are assigned to R.
(C) Two officers are assigned to L.
(D) Three officers are assigned to M.
(E) Three officers are assigned to S.

4. If Ghulam and Kabeer are assigned to L and M, respectively, which of the following must be true?
(A) Fareed is assigned to either R or S.
(B) Imtiaz is assigned to either R or S.
(C) R and S each have two officers assigned to them.
(D) Hamid is assigned to L.
(E) Hamid is assigned to S.

5. If Ghulam, Hamid, and Kabeer are among the officers assigned to offices in cold areas, which of the following must be true?

(A) Fareed is aligned to a foreign office to which none of the other five office officers is assigned.
(B) Ghulam is assigned to a foreign office to which none of the other five office officers is assigned.
(C) Junaid is assigned to the same foreign office as Kabeer.
(D) Hamid is assigned to the same foreign office as Ghulam.
(E) Hamid is assigned to the same foreign office as Kabeer.

Question No 6-11

A room is one of several in which all the furniture is to be repainted. The room contains exactly four pieces of furniture—a Table, two beds, and a Chair—and no furniture are to be moved into or out of that room. The repainting specifications are as follows:

On completion of repainting, any piece of furniture in a room must be uniformly blue, gray, purple, or white.
On completion of repainting, at least one of the pieces of furniture in a room must be gray, and the Chair must be either blue or white.
If, prior to repainting, a piece of furniture is either orange or yellow, that piece must be white on completion of repainting.
If, prior to repainting, a piece of furniture is purple, that piece must remain purple on completion of repainting.

All of the specification above can and must be met in each room scheduled for repainting.

6. Which of the following could be the furniture colors in the room on completion of repainting?

	Table	Bed	Bed	Chair
(A)	Yellow	Blue	White	Purple
(B)	White	Gray	Gray	Blue
(C)	Gray	White	Orange	Blue
(D)	Blue	Purple	White	Purple
(E)	Purple	White	Blue	Gray

7. If, prior to repainting, one bed in the room is orange and the other bed is purple, which of the following must be true of the furniture in the room on completion of repainting?
   (A) The Table is gray
   (B) Exactly one of the beds is blue
   (C) Exactly one of the beds is orange.
   (D) Both of the beds are white.
   (E) The Chair is purple.

8. If. Prior to repainting, the Chair in the room is gray and the other three pieces of furniture are white, then of these four pieces of furniture there must be how many that are painted a color that differs from its color prior to repainting?

   (A) Four (B) Three (C) Two (D) One (E) None

9. Prior to repainting, and given the repainting specifications, the Chair in the room could have been any of the following colors EXCEPT

   (A) Blue (B) Gray (C) Purple (D) White (E) Yellow

10. If, prior to repainting, the Table is white, one bed is orange, one bed is purple, and the Chair is gray, which of the following must be true of the furniture in the room on completion of repainting?

(A) At least one piece of furniture is blue.
(B) Only one piece of furniture is gray.
(C) Only one piece of furniture is purple.
(D) Exactly two pieces of furniture are white
(E) Exactly two pieces of furniture are changed in color as a result of repainting.

11. Which of the following could be true of the furniture in the room prior to repainting if, also prior to repainting, three of the pieces of furniture in the room are purple?

(A) The Chair is blue.
(B) The Chair is gray
(C) One piece of furniture is white
(D) One piece of furniture is yellow
(E) The fourth piece of furniture also is purple.

Question No 12- 14

A engineer is planning to build a housing complex on an empty blocks of land. Exactly seven different designs of houses—F, G, H, I, J, K, and L—will be built in the complex. The complex will contain several blocks, and the engineer plans to put houses of at least three different designs on each block. The engineer will build the complex according to the following rules:

Any block that has design L on it must also have design J on it.

Any block adjacent to one that has on it both design H and design K must have on it design I and design L.

No block adjacent to one that has on it both design R and design L can have on it either design I or design J

No block can have on it both design H and design F.

12. Which of the following can be the complete selection of house designs on a block?

(A) F, G, H
(B) F, H, K
(C) G, T, L
(D) H. J, L
(E) I, K, L

13. Which of the following house designs must be on a block that is adjacent to one that has on it only designs H, I, J, K, and L?

(A) F
(B) R
(C) H
(D) J
(E) K

14. Which of the following can be the complete selection of house designs for a block that is adjacent to exactly one block, if that one block has on it designs H, I, J, and K only?

(A) H, I, and K
(B) I, K, and L
(C) G, H, K, and L
(D) H, I, J, and K
(E) I, J, K, and L

Question No 15-21

In a game, exactly six inverted caps stand side by side in a straight line, and each has exactly one *paper* hidden under it. The caps are numbered consecutively 1 through 6. Each of the papers is painted a single solid color. The colors of the papers are gold, mauve, olive, pink, silver, and white. The papers have been hidden under the caps in a manner that conforms to the following conditions:

The pink paper must be hidden under a lower-numbered cap than the olive paper.
The silver paper must be hidden under a cap immediately adjacent to the cap under which the mauve paper is hidden.
The gold paper must be hidden under cap 5.

15. Which of the following could be the colors of the papers under the caps, in order from 1 through 6?

(A) Gold, white, mauve, silver, pink, olive
(B) Mauve, gold, pink, silver, olive, white
(C) Mauve, silver, pink, white, gold., olive
(D) Olive, white, silver, mauve, gold, pink
(E) Silver, pink, mauve, white, gold, olive

16. If the mauve paper is under cap 4, the silver paper must be under cap

(A) 1 (B) 2 (C) 3 (D) 5 (E) 6

17. A paper of which of the following colors could be under cap 6?

(A) Gold (B) Mauve (C) Pink (D) Silver (E) White

18. If the pink paper is under cap 4, the olive paper must be under cap

(A) 1 (B) 2 (C) 3 (D) 5 (E) 6

19. Which of the following must be true?

(A) The gold paper is under a lower-numbered cap than the white paper.
(B) The olive paper is under a lower-numbered cap than the gold paper.
(C) The pink paper is under a lower-numbered cap than the gold paper.
(D) The pink paper is under a lower-numbered cap than the silver paper.
(E) The silver paper is under a lower-numbered cap than the white paper.

20. If the olive paper is under cap 2, papers of which of the following colors could be under caps immediately adjacent to each other?

(A) Gold and mauve
(B) Gold and pink
(C) Olive and white
(D) Pink and silver
(E) Silver and white

21. If the mauve paper is under cap 1, papers of which of the following colors must be under caps immediately adjacent to each other?

(A) Gold and olive
(B) Gold and white
(C) Pink and silver
(D) Pink and white
(E) Silver and white

Test No 2

Question No 1 - 5

In a display of products available from a textile manufacturer, exactly eight dresses are to be displayed on eight stands that are lined up in a straight line and numbered consecutively 1 through 8 from left to right. There are three Green dresses, two Blue dresses, two White dresses, and one Tan dress. The dresses must be displayed according to the following conditions:

At least one of the Blue dresses must be next to a White dress.
The Tan dress cannot be next to a White dress.
The three Green dresses cannot be placed on three consecutive stands.
Stand 5 must hold a Green dress.
Either stand 1 or stand 8 or both must hold a White dress.

1. Which of the following is an acceptable ordering of colors of dresses from left to right?

	S 1	S 2	S 3	S 4	S 5	S 6	S 7	S 8
(A)	GREEN	GREEN	WHITE	TAN	GREEN	BLUE	BLUE	WHITE
(B)	TAN	GREEN	WHITE	GREEN	BLUE	BLUE	GREEN	WHITE
(C)	BLUE	WHITE	GREEN	GREEN	GREEN	TAN	BLUE	WHITE
(D)	WHITE	GREEN	BLUE	WHITE	GREEN	TAN	BLUE	GREEN
(E)	WHITE	GREEN	WHITE	GREEN	GREEN	BLUE	TAN	BLUE

2. If a Green dress is placed on stand 4, another Green dress could be placed on any of the following stands EXCEPT

(A) 1
(B) 3
(C) 5
(D) 7
(E) 8

3. If Blue dresses are on stands 1 and 2, which of the following must be true?

(A) A Green dress is on stand 3.
(B) The Tan dress is on stand 4.
(C) A Green dress is on stand 4.
(D) A White dress is on stand 6.
(E) The Tan dress is on stand 8.

4. If stand 2 holds an Tan dress, which of the following must be true?

(A) Stand 1 holds a Green dress.
(B) Stand 3 holds a Blue dress.
(C) Stand 6 holds a Blue dress.
(D) Stand 7 holds a White dress.
(E) Stand 8 holds a White dress.

5. If stands 1 and 3 hold Green dresses, any of the following could be true EXCEPT:

(A) Stand 2 holds a White dress.
(B) Stand 4 holds a Tan dress.
(C) Stand 6 holds a Blue dress.
(D) Stand 7 holds a White dress.
(E) Stand 7 holds a Tan dress.

Question No 6- 11

A professor of chemistry must divide eight practical tasks---A, B, C, D, E, F, G, H--- into two groups of four acts each, one group scheduled to perform, one task at a time, in instrument 1 and the other group scheduled to perform, also one task at a time, in instrument 2. All acts take equally long to perform, and every task that takes palace in one of the instruments must be scheduled for exactly the sane time slot as a task that takes place in the other instrument. The schedule must also conform to the following conditions:

Task A must perform in one of the instruments at the same time that task C perform in the other instrument.

Task B must perform in one of the instruments at the same time that task D perform in the other instrument.

Task E must perform in the same instrument as Task A

Task F must perform in the same instrument as Task D

Task G must be the second task that perform in instrument 2

6. Which of the following, without regard to the order in which they will be performed, could be the group of acts to be scheduled for performance in instrument 1?
(A) A, B, C, and. F
(B) A, B. D, and E
(C) B, C, D, and F
(D) C, D, F, and H
(E) D. E, F, and *H.*

7. If task F performs in instrument 1, which of the following acts must perform in instrument 2?

(A) A (B) B (C) C (D) E (E) H

8. If task E must perform in one of the instruments at the same time that task F performs in the other instrument, which of the following must be the second task in instrument 1?

(A) A (B) B (C) C (D) D (E) H

9. If the order, from first to last, of practical tasks in instrument 2 is D, G, F, C, which of the following is an accept able order of acts in instrument 1, also from first to last?
(A) A, E, B. H
(B) B, H, A, E
(C) B'. H, E, A
(D) H, B. A, E
(E) H, E, B. A

10. If task A must perform between task G and task E in instrument 2, which of the following must be the first task in instrument 1?

(A) B (B) C (C) D (D) F (E) H

11. If task F must take place in instrument 1 immediately after task A and immediately before task E, which task must be the third task in instrument 2?

(A) B (B) C (C) D (D)F (E) H

Question No 12- 14

Students at the Institute of Business Administration must complete, a total of twelve courses selected from three different general areas—marketing, finance, and human resources—in order to graduate. The students must meet the following course distribution requirements:

At least six of the required twelve courses must be from finance.
At least five of the required twelve courses must be from marketing and human resources, with at least one, but no more than three, selected from marketing.

12. If a student has completed six finance courses, all of the following are possible groups of courses that fulfill the course distribution requirements EXCEPT

(A) Three marketing courses and three social science courses
(B) Two marketing courses and four human resources courses
(C) One marketing course, one finance course, and four human resources courses
(D) one-marketing course, two finance courses, and three human resources courses
(E) Three marketing courses, one finance course, and two human resources courses

13. The minimum number of human resources courses required in order to fulfill the course distribution requirements is

(A) 1
(B) 2
(C) 3
(D)4
(E) 5

14. If a student has completed six finance courses and one human resources course, the possible groups of courses to fulfill the course distribution requirements must include at least

(A) two marketing courses
(B) three marketing courses
(C) one finance course
(D) one human resources course
(E) three human resources courses

Question No 15- 21

Two boys singers, F and G; two Girls singers, H and I; two boys comedians, J and K; and two girls comedians, L and M, are the eight actors who are to perform in a club on a certain night. Each actor is to perform alone and only once that night. The .actors may perform in any order that conforms to the following restrictions:

The performances by singers and the performances by comedians must exchange throughout the night.
The first performance that night must be by a girls actor and the second performance by a boys actor.
The final performance must, be by a boys singer.

15. Which of the following could be the last of the actors to perform?

(A) H (B) G (C) J (D) I (E) K

16. Which of the following could be the first of the actors to perform?

(A) F (B) H (C) M (D) I (E) K

17. If H is to perform fourth, which of the following must perform, sixth?

(A) F (B) G (C) M (D) I (E) K

18. If M is to perform seventh, which of the following must perform first?

(A)L (B)H (C) G (D) J (E) I

19. If F is to perform eighth, which of the following must perform second?

(A) H (B) G (C) J (D) I (E) k

20. If J is to perform third, K must perform

(A) first or fifth
(B) second or fifth
(C) fourth or seventh
(D) fifth or seventh
(E) sixth or seventh

21. If L, is to perform third, I fourth, and K fifth, which of the following must perform sixth?

(A) F (B) H (C) G (D) J (E) M

Test No 3

Question No 1 - 5

At the start of a two-week hiking trip, eight girls— Fozia, Hina, Juwaria, Kiren, Milaka, Samina, Tamina, and Raheela—will divide into *a.* Lake Group and a Mountain Group of four members each. After following different trails for one week, the groups will meet and the girls will again divide into a Lake Group and a Mountain Group *of* four members each, which will again follow different trails for a week. The groups must be formed with the following restrictions:

For the first week, Tamina cannot be in the same group as Raheela.

For the second week.' both Tamina and Raheela must be in the Lake Group.

For each of the two weeks, if Fozia is in the Mountain Group, Kiren must also be in the Mountain Group.

For each of the two weeks, Juwaria must be in the same group as Milaka.

1. Which of the following could be the members of the Lake Group for the first week?

(A) Fozia, Hina, Kiren, and Raheela
(B) Fozia, Kiren, Milaka, and Samina
(C) Hina, Juwaria, Samina, and Tamina
(D) Hina, Kiren, Tamina, and Raheela
(E) Hina, Samina, Tamina, and Raheela

2. If Milaka is in the Lake Group for the second week, which of the following must be the members of the Mountain Group for that week?

(A) Fozia, Hina, Juwaria, and Samina
(B) Fozia, Hina, Kiren, and Samina.
(C) Hina, Juwaria, Kiren, and Samina
(D) Hina, Juwaria, Samina, and Raheela
(E) Juwaria, Kiren, Tamina, and Raheela

3. If, for each week, Samina is in a different group from Tamina, Samina must be in a group with which of the following for exactly one week?

(A) Fozia
(B) Hina
(C) Kiren
(D) Milaka
(E) Raheela

4. If Juwaria is in the Mountain Group for the first week, which of the following must be in the Lake Group for that week?

(A) Fozia
(B) Hina
(C) Milaka
(D) Samina
(E) Tamina

5. If exactly two girls change groups at the end of the first week, those two girls could be which of the following?

(A) Hina and Kiren
(B) Hina and Samina
(C) Kiren and Samina
(D) Kiren and Raheela
(E) Tamina and Raheela

Question No 6 - 11

A Human Resources Manager is scheduling a single interview with each of seven candidates: Fahid, Ghalib, Junaid, Mohsin, Naveed, Pervaiz, and Tanveer. Each interview is to be 30 minutes in length, and the interviews are to be scheduled back-to-back, starting at 9 a.m., according to the following conditions:

Ghalib's interview must be scheduled to begin at either 9 a.m. or 10:30 a.m.

Pervaiz's interview must be scheduled either as the next interview after Ghalib's interview or as the next interview after Naveed' interview.

Naveed's interview must be scheduled to occur sometime after Mohsin's interview and sometime before Fahid's interview.

Junaid's interview must be scheduled to begin exactly one hour after Tanveer's interview is scheduled to begin.

6. Which of the following is an acceptable schedule for the seven people?

	9a.m.	9:30a.m.	10a.m.	10:30a.m.	11a.m.	11:30a.m.	12p.m.
(A)	Ghalib	Naveed	Pervaiz	Mohsin	Tanveer	Fahid	Junaid
(B)	Ghalib	Pervaiz	Tanveer	Mohsin	Junaid	Naveed	Fahid
(C)	Mohsin	Ghalib	Pervaiz	Tanveer	Naveed	Junaid	Fahid
(D)	Mohsin	Tanveer	Junaid	Ghalib	Naveed	Pervaiz	Fahid
(E)	Tanveer	Pervaiz	Junaid	Ghalib	Mohsin	Naveed	Fahid

7. Which of the following people can be scheduled for the interview that begins at 9 a.m.?

(A) Fahid (B) Junaid (C) Mohsin
(D) Naveed (E) Pervaiz

8. The earliest time that Junaid's interview can be schedule to begin is

(A) 9:30 a.m. (B) 10 a.m. (C) 10:30 a.m.
(D) 11 a.m. (E) 11:30 a.m.

9. If Naveed's interview is scheduled to begin at ' 9:30 a.m., who must be scheduled for the interview that begins at 11a.m.?

(A) Fahid
(B) Junaid
(C) Mohsin
(D) Pervaiz
(E) Tanveer

10. If the interview schedule shows Tanveer's interview as the next after Pervaiz's and Pervaiz's interview as the next after Naveed', how long after Ghalib's interview is scheduled to begin must Junaid's interview be schedule to begin?

(A) 30 minutes
(B) 1 hour
(C) 90 minutes
(D) 2 hours
(E) 3 hours

11. If Tanveer is scheduled for the interview that begins at 9 a.m., Fahid's interview must be scheduled to begin at

(A) 9:30 a.m.
(B) 10:30 a.m.
(C) 11 a.m.
(D) 11:30a.nu
(E) 12:00 noon

Question No 12 - 14

A book society holds two discussion sessions each summer. The discussion leader of the society is selecting two Sets of books—Set 1 and Set 2—for the sessions. She is choosing from seven books—F, G, H, I, J, K, and L. Set 1 will contain four of the books and Set 2 will contain the other three books. The leader must select the books for each Set according to the following restrictions:

F cannot be in the same Set as G.
If J is in Set 2, L must also be in Set 2.
If L is in Set 1, I must also be in Set 1.

12. If F and L are in Set 2, any of the following books can also be in Set 2 EXCEPT

(A) G
(B) H
(C) I
(D)J
(E) K

13. If L is in Set 1, which of the following must be true?

(A) F is in Set 1.
(B) H is in Set 2.
(C) J is in Set 2.
(D) G is in the same Set as H.
(E) I is in the same Set as K.

14. If J is in Set 2, which of the following must be true?

(A) F is in Set 2.
(B) G is in Set 2.
(C) I is in Set 1.
(D) K is in the same Set as L.
(E) L is in the same Set as G.

Question No 15 - 21

Six doggies—R, V, W, X, Y, Z—must each be scheduled for examination by a veterinarian. The doggies are to be examined one at a time in six consecutive time slots on the same day according to the following conditions:

W cannot be examined immediately before or immediately after X.
V must be examined immediately before Z.
R must be examined fourth.

15. Which of the following is an acceptable examination schedule for the doggies, in order from first examined to last examine?

(A) V, Y, X, R, W, Z
(B) V, Z, Y, R, X, W
(C) W, Y, X, V, Z, R
(D) X, Y, W, R, V, Z
(E) Y, W, X, R, V, Z

16. If V is examined second, which of the following must be true?

(A) R is examined at some time before X.
(B) W is examined at some time before Y.
(C) Y is examined *at* some time after R
(D) W is examined sixth.
(E) X is examined first,

17. X can be examined in any of the following time slots EXCEPT

(A) First (B) second (C) third (D) fifth (E) sixth

18. If V is examined first, Y must be examined

(A) immediately before R
(B) immediately before X
(C) at some time before W
(D) at some time after R
(E) at some time after X

19. If X is examined sixth, which of the following is a complete and accurate list of the time slots any one of which could be the time slot in which W is examined?

(A) First
(B) First, second
(C) First, third
(D) First, second, third
(E) Second, third, fifth

20. If Z is examined at some time before W is examined, V can be examined

(A) immediately after X
(B) immediately after Y
(C) immediately before Y
(D) at some time after W,
(E) at some time after R

21. If both W and Y are examined at some time after R is examined, X must be examined

(A) first.
(B) second
(C) third
(D) first or else third
(E) second or else third

Test No 4

Question No 1 - 5

In order to gain full course credit for him tour of a foreign city. Zeeshan must visit exactly seven famous places of interest-—a foreign office, a river, the hill, a library, a mosque, a club, and a theater. Any tour plan that Zeeshan devises will allow him to keep to him timetable and is thus acceptable, except that he must plan his tour to conform with the following conditions:

The foreign office must be one of the first three places visited.
The hill must be visited immediately before the river.
The library can be neither the first nor the last place visited.
The mosque must be either the first or the last place visited.
The club must be one of the last three places visited.

1. Which of the following is an acceptable order in which Zeeshan may tour all seven places of interest?
   (A) Foreign office, theater, hill, library, club, river, and mosque
   (B) Hill, river, foreign office, library, theater, club, and mosque
   (C) Library, theater, foreign office, hill, river, mosque, and club
   (D) Mosque, foreign office, club, hill, library. river, and theater
   (E) Mosque, library, hill, river, foreign office, club, and theater

2. If, on him tour. Zeeshan visits the theater, the library, and the foreign office, one directly after the other in the order given, he must visit the river
   (A) second
   (B) third
   (C) fourth
   (D) fifth
   (E) sixth

3. If, Zeeshan begins him tour at the hill, which of the following could be the fourth place of interest he visits on the tour?
   (A) The foreign office
   (B) The river
   (C) The library
   (D) The mosque
   (E) The club

4. If Zeeshan is to visit the club sixth, he could visit the hill in any of the following positions on him tour EXCEPT
   (A) first
   (B) second
   (C) third
   (D) fourth
   (E) fifth

5. If Zeeshan visits exactly one place of interest between him visits to the foreign office and the club, that place must be either the
   (A) river or the hill
   (B) river or the theater
   (C) hill or the mosque
   (D) library or the mosque
   (E) library or the theater

Question No 6 - 12

The administrator of a commercial designing Firm is scheduling exactly six tasks—J, K, L, M, N, and O—for a particular week, Monday through Saturday. Each task can be completed in one full day, and exactly one task will be 'scheduled for each day. The tasks must be scheduled according to the following conditions:

J must be completed sometime before L is completed.

M must be completed on the day immediately before or the day immediately after the day on which O is completed.

N must be completed on Thursday.

6. Which of the following is an acceptable schedule of tasks for the week?

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
(A)	J	K	M	N	O	L
(B)	J	N	L	O	M	K
(C)	K	O	M	N	L	J
(D)	M	O	J	N	K	L
(E)	O	J	M	N	L	K

7. Any of the following could be completed on Saturday EXCEPT

(A) J (B) K (C) L (D)M (E) O

8. If K is completed on Wednesday, which of the following could be true?

(A) J is completed on Tuesday.
(B) L is completed on Monday.
(C) L is completed on Friday.
(D) M is completed on Monday.
(E) O is completed on Thursday.

9. If O is completed on Monday, which of the following must be true?

(A) J is completed sometime before K.
(B) J is completed sometime before N.
(C) K is completed sometime before L.
(D) N is completed sometime before K.
(E) N is completed sometime before L.

10. If J is completed on Tuesday, which of the following must be true?

(A) K is completed on Monday.
(B) L is completed on Thursday.
(C) L is completed on Saturday.
(D) M is completed on Wednesday.
(E) O is completed on Saturday.

11. If M is completed on Tuesday, any of the following could be true EXCEPT:

(A) J is completed on Monday.
(B) K is completed on Saturday.
(C) L is completed on Wednesday.
(D) L is completed on Friday.
(E) O is completed on Wednesday.

12. If K is completed on Friday, which of *he following must be true?

(A) J is completed on Monday.
(B) J is completed on Wednesday.
(C) L is completed on Saturday.
(D) M is completed on Monday.
(E) O is completed on Tuesday.

Question No 13 - 15

Retail Store identify individual product by means of a four-symbol identification code running left to right. The symbols used are the four digits 6, 7, 8, and 9 and the four letters L, M. N, and O.

Each code consists of two letters and two digits.
The two letters must be next to each other, and the two digits must be next to each other,
Of the two digits, the left digit must be less than the right digit.
The two letters must be dissimilar letters.

13. Which of the following could be the third symbol in a code in which the fourth symbol is 3?

(A) L
(B) M
(C) O
(D) 6
(E) 9

14. Which of the following must be true of any code in which the letter L occurs?

(A) The letter M also occurs in that code.
(B) The letter N also occurs in that code.
(C) The letter O also occurs in that code.
(D) The letter L occurs in that code exactly once.
(E) The letter L occurs in that code exactly twice.

15. If the first symbol in a code is 7, any one of the following symbols could occur in one of the remaining three positions EXCEPT the

(A) digit 6
(B) digit 8
(C) digit 9
(D) letter N
(E) letter O

Question No 16 - 22

Exactly six different essays will appear in a coming issue of a magazine. Three of the essays—G, I, and J— are by the writer K, and the other three essays—M, N, and P—are by the writer Y. Each essay will appear exactly once in the issue, and a essay must appear on each of the pages 3, 6, 9. 12, 15, and 18. The order in which the essays appear in the issue will be governed by the following conditions:

The essays on pages 3, 9, and 15 must all be by the same writer.

I must precede P.

M must precede J.

16. Which of the following is an acceptable order, from first to last, in which the essays can appear in the magazine?

(A) I, P, M, G, N, J
(B) J, N, I, P, G, M
(C) M, I, G, J", N, P
(D) M, I. P, G, N, J
(E) N, G, M, J, P, I

17. J could appear on any of the following pages EXCEPT

(A) 3 (B) 6 (C) 9 (D) 12 .(E) 15

18. If N appears on page 6, which of the following essays must appear on page 12?

(A) G (B) I (C) J (D) M (E) P

19. If an essay by K appears on page 3, which of the following is a pair of essays either of which could appear on page 18 ?

(A) G and J
(B) G and M
(C) J and P
(D) M and N
(E) N and P

20. If G and N appear on pages 15 and 18, respectively, which of the following is a pair of essays that must appear on pages 3 and 6, respectively?

(A) I and J
(B) I and M
(C) I and P
(D) J and M
(E) J and P

21. If P appears on page 6, G must appear on which of the following pages?

(A) 3 (B) 9 (C) 12 (D) 15 (E) 18

22. If I appears on page 12, which of the following is a complete and accurate list of all the essays any one of which could appear on page 9?

(A) M
(B) P
(C) M, N
(D) N, P
(E) M, N, P

Test No 5

Question No 1 - 5

Three desk shelves—I, II, and III—are being stocked with seven types of articles. Bred, Biscuits, Pizzas, Snakes, Cake, Sweet, and Sandwich are to be placed in the shelves so that the goods belonging to any given type are all together in one shelf and no shelf contains more than three types of goods. The arrangement of the types of goods is subject to the following further constraints:

Bred and Cake must be in a shelf together.

Neither Biscuits nor Snakes can be in the same shelf as Pizzas.

Neither Biscuits nor Snakes can be in the same shelf as Sweet.

The Sweet must be in either shelf I or shelf' II.

Each type of goods must be in some shelf or other.

1. Which of the following is an acceptable arrangement?

	Shelf I	Shelf II	Shelf III
(A)	BISCUITS, Sweet	Sandwich	Bred, PIZZAS, CAKE
(B)	BISCUITS, PIZZAS, Sweet	Snakes	Bred, CAKE
(C)	PIZZAS, Sweet, Sandwich	Bred, BISCUITS, Snakes	CAKE
(D)	PIZZAS, Sweet, Sandwich	BISCUITS, Snakes	Bred, CAKE
(E)	PIZZAS, Sandwich	BISCUITS, Snakes	Bred, CAKE, Sweet

2. If Pizzas are in I and Sweet is in II, which of the following must be true?

(A) Bred are in I.
(B) Bred are in U.
(C) Bred are in III.
(D) Biscuits are in II.
(E) Biscuits are in III.

3. If Pizzas are in II and Sweet is in I. any of the following can be true EXCEPT:

(A) Bred are in II.
(B) Bred are in III.
(C) Cakes are in I.
(D) Cakes are in II.
(E) Sandwich are in III.

4. If Bred, Cake, and Sandwich are in I, which of the following must be true?

(A) Biscuits are in II.
(B) Pizzas are in I.
(C) Pizzas are in III.
(D) Snakes are in II.
(E) Snakes are in III.

5. If Cake is in II, which of the following is acceptable?

(A) Bred are in 1 and sandwich are in II.
(B) Biscuits are in I and Snakes are in II.
(C) Biscuits are in I and Snakes are in III.
(D) Snakes are in I and Sandwich are in II.
(E) Sweet is in I and Pizzas are in II.

Question No 6 - 11

A organizer must group nine paintings— P, Q, R, S, T, U, V, W, and X—in twelve stands numbered consecutively from 1-12. The paintings must be in three groups, each group representing a different color. The groups must be separated from each other by at least one unused wall stand. Three of the paintings are from the Green color, two from the Blue color, and four from the White color.

Unused wail stands cannot occur within groups.
Q and S are paintings from different colors.
S, T, and U are all paintings from the same color.
Stand number 5 is always empty.
P and V are Green-color paintings.
W is a Blue-color painting.

6. If stand 4 is to remain empty, which of the following is true?
(A) Stand number 10 must be empty.
(B) The groups of paintings must be hung in white, blue and green order by color.
(C) A Green-color painting must be hung in stand 3.
(D) A Blue-color painting must be hung in stand 1.
(E) A White-color painting must be hung in stand 12.

7. If the paintings are hung in white, blue and green order by color, the unused wall stands could be
(A) 1, 5, and 10
(B) 1,6, and 10
(C) 4, 7, and 8
(D) 5, 8, and 12
(E) 5, 9, and 10

8. Which of the following is a stand that CANNOT be occupied by a Blue-color painting?
(A) Stand 1 (B) Stand 6 (C) Stands (D) Stand 11 (E) Stand 12

9. If S hangs in stand 11, which of the following is a possible arrangement for stands 8 and 9 ?
(A) P in 8 and V in 9
(B) T in 8 and Q in 9
(C) W in 8 and Q in 9
(D) 8 unused and R in 9
(E) 8 unused and P in 9

10. If the White-color paintings are hung in stands 1- 4, which of the following CANNOT be true?
(A) Stand 8 is unused.
(B) Stand 9 is unused.
(C) P is hung in stand 6.
(D) V is hung in stand 12.
(E) W is .hung in stand 9.

11. If the first five paintings, in numerical order of stands, are P, X, V, W, Q, which of the following must be true?
(A) Either stand 1 or stand 4 is unused.
(B) Either stand 7 or stand 12 is unused.
(C) R hangs in stand 11.
(D) Two unused stands separate the Green-color and Blue-color paintings. .
(E) Two unused stands separate the Blue-color and White-color paintings.

Question No 12 - 14

A chemist has exactly four unlabeled glasses containing colorless liquids standing on a laboratory shelf. The chemist knows that the only six liquids that the glasses could possibly contain are pure M, pure N, pure O, or any combination of two of these, and that no two glasses are filled with the same liquid. The only feasible way of testing for the identity .of the liquids is to use strips of a special white reactive paper that turns Green, Brown, or Purple, depending on which of certain liquids it is dipped in. The full table of color changes and of the triggers for those changes is given below:

Green	Brown	Purple
Pure N	Pure M	M combine with N
N combine with O	Pure O	M combine with O
	M, N, and O Combine together	

12. If none of the four liquids turns the reactive paper Purple, each of the following must be the contents
of one of the glasses EXCEPT

(A) pure M
(B) pure N
(C) pure O
(D) N combined with O
(E) M, N, and O combined together

13. If the liquid in the first glass tested turns the reactive paper Green, and if the liquid in the second glass tested turns the paper Purple, then a combination of some of the liquid from each of the first two glasses tested will turn the reactive paper

(A) Green
(B) Purple
(C) either Green or Brown
(D) either Green or Purple
(E) either Brown or Purple

14. If the liquid in the first glass tested turns the reactive paper Green and the liquid in the second glass tested turns it Brown, and if a combination of some of the liquid from each of the first two glasses tested turns it Green, then-which of the following must be true?

(A) The first glass tested contains pure N.
(B) The first glass tested contains N combined with O.
(C) The second glass tested contains pure M.
(D) The second glass tested contains pure O.
(E) The second glass tested contains N combined with O.

Question No 15 - 21

Exactly seven boys—F, G, H, I, J, K, and L—are to be divided into two study teams, team 1 and team 2. Team 1 must have three members, and team 2 must have four members. The boys are being assigned to teams according to the following conditions:

F cannot be in the same team as H.

If G is in team 1,

I must be in team 1.

If J is in team 1, H must be in team 2.

K must be in team 2.

15. Which of the following is an acceptable assignment of the boys to the two teams?.

	Team 1	Team 2
(A)	F, G, L	H, I, J, K
(B)	F, H. I	G, J, K, L
(C)	H, I, K	F, G, J, L
(D)	H, I, L	F, G, J, K
(E)	H, J, L	F, G, I, K

16. If F is in team 2, which of the following must also be in team 2?

(A) G (C) H (C) I (D) J (E) L

17. If J is in-team 1, which of the following must also be in team 1?

(A) F (B) G (C) H (D) I (E) L

18. If H and L are both in team 1, which of the following must be true?

(A) G is in the same team as I.
(B) G is in the same team as J.
(C) I is in the same team as F.
(D) J is in the same team as H.
(E) L is in the same team as K.

19. If J is in the same team as H, any of the following is a pair of boys who could be in a team together EXCEPT

(A) F and G
(B) G and L
(C) H and L
(D) I and L
(E) J and K

20. If I is in the same team as L, which of the following must be true?

(A) F is in team 1.
(B) G is in team 1.
(C) H is in team 1.
(D) J is in team 2.
(E) L is in team 2.

21. If G is in team 1, which of the following must be true?

(A) F is in team 1.
(B) H is in team 1.
(C) H is in team 2.
(D) L is in team 1.
(E) L is in team 2.

Test No 6

Question No 1 - 5

A Electrical Engineer is experimenting with varying arrangements of exactly six units that are electrical bulbs—T, U, V, W, X, and Y—in a loop containing eight positions, each capable of containing one bulb. In each arrangement, each bulb is at one of the eight positions and two positions are empty. In devising arrangements, the Electrical Engineer must obey the following restrictions:

T must be directly adjacent to U.

X must be directly adjacent to Y.

W must be directly adjacent to Y on one side and to an empty position on the other.

A signal can be transferred from one bulb directly to another when the two bulbs are directly adjacent to each other, and only then. A signal can be transferred either way around the loop, from one bulb to another, until it reaches an empty position. A signal cannot be transferred across an empty position.

1. If a signal can be transferred, either directly or indirectly, from U to V, it must be true that a signal can be transferred, either directly or indirectly, from

(A) T to V (B)T to W (C) U to W (D) U to X (E) U to Y

2. If V is directly adjacent to X, any of the following could be true EXCEPT:

(A) T is directly adjacent to V.
(B) U is directly adjacent to V.
(C) U is directly adjacent to X.
(D) T is directly adjacent to an empty position.
(E) U is directly adjacent to an empty position.

3. If X is directly adjacent to an empty position, which of the following is the greatest number of bulbs, including starting and ending bulbs, that can be used in the transfer of a single signal?

(A) Two
(B) Three
(C) Four
(D) Five
(E) Six

4. If there is one bulb that is directly adjacent to both of the empty positions, that bulb must be

(A) U
(B) V
(C) W
(D)X
(E) Y

5. If a signal can be transferred from T to Y, any of the following bulbs could be directly adjacent to an empty position EXCEPT

(A) T
(B) U
(C) V
(D) W
(E) X

Question No 6 - 11

In a cable assembly plant, cables are manufactured by twisting plastic-coated copper wires together. There are copper wires of exactly six different solid colors—pink, brown, tan, gray, purple, and blue. Copper wires must be manufactured into single cables according to the following rules:

Each cable must contain at least three copper wires and copper wires of at least three different colors.
At most two copper wires in a single cable can be blue.
At most two copper wires in a single cable can be purple.
There can be at most one copper wire of each of the other colors in a single cable.
If one copper wire is pink, then one copper wire must be brown.
If one copper wire is tan, then no copper wire can be gray.

6. Which of the following could be the complete set of copper wires in an acceptable cable?

(A) A gray copper wire, a purple copper wire, and a tan copper wire
(B) A tan copper wire, a blue copper wire, and a purple copper wire
(C) A pink copper wire, a blue copper wire, and a gray copper wire
(D) A brown copper wire and exactly two blue copper wires
(E) Exactly two blue copper wires and exactly two purple copper wires

7. The maximum number of copper wires that can be used in an acceptable cable is

(A) 8 (B) 7 (C) 6 (D) 5 (E) 4

8. If exactly one blue copper wire and exactly one purple copper wire are used in an manufactured cable, which of the following must be true?

(A) The cable contains no more than five copper wires.
(B) The cable contains exactly six copper wires.
(C) The cable contains a brown copper wire.
(D) The cable does not contain a pink copper wire.
(E) The cable does not contain a tan copper wire.

9. If a purple copper wire and a tan copper wire must be among the copper wires chosen for a particular cable, any of the following pairs of copper wires could complete the cable EXCEPT a

(A) blue copper wire and a second purple copper wire
(B) brown copper wire and a second purple copper wire
(C) brown copper wire and a blue copper wire
(D) pink copper wire and a brown copper wire
(E) pink copper wire and a blue wire

10. If a manufactured cable consists of exactly five copper wires, each a different color, it could be true that a color NOT used is

(A) blue
(B) purple
(C) gray
(D) pink
(E) brown

11. If there is an additional requirement that tan must be used if brown is used, which of the following must be true?

(A) No cable contains fewer than six copper wires.
(B) No cable contains more than five copper wires.
(C) Gray is never used if pink is used.
(D) Pink is always used if tan is used.
(E) Blue is used exactly once if brown is used.

Questions 12 - 14

A student is planning his class schedule for the First and second semesters. He must take exactly three courses each semester. By the end of the second semester, the student must complete at least three courses in Area FINANCE, at least one course in Area MARKETING, and at least one course in Area SOCIAL SCIENCE. The only courses available to the student are:

Area FINANCE: F102, F201, F202, F203

Area MARKETING: M101, M102, M103, M201

Area SOCIAL SCIENCE: S101, S102, S202

The selection of courses is subject to the following restrictions;

A student can take no more than two courses with the same letter designation per semester.

Courses with a number designation in the 200's are offered only in the second semester; courses with a number designation in the 100's are offered in both the First and second semesters.

No course taken in the First semester can be repeated in the second semester.

12. Which of the following is a course that the student must take?

(A) F102 (B) M101 (C) M102 (D) S101 (E) S102

13. Which of the following is a possible schedule for the second semester?

(A) FI02, M101 and F202
(B) F102,M101 andM102
(C) F201, F202 and S102
(D) M101, M102 and M201
(E) M102, M20l and S101

14. If the student takes M101 and M102 in the First, his second schedule must include

(A) F203
(B) F201 and F202
(C) M201
(D) exactly one course from Area MARKETING
(E) exactly one course from Area SOCIAL SCIENCE

Question No 15 - 21

A journal published three times a year contains exactly three articles, each of a different type, in each issue. Exactly five types of articles are printed in the journal: finance, I.T, marketing, business, and sale force. No article is of more than one type. In choosing articles to publish during the year, the editor adheres to the following conditions:

At least one article of each type must be published each year.

The fall issue of each year always contains marketing.

No issue can include both an I.T and marketing.

No two consecutive issues can each contain sale force.

At least two issues each year must contain finance.

15. Which of the following can be an acceptable schedule of articles for a year's worth of issues of the journal?

Winter Issue	Spring Issue	Fall Issue
Finance, I.T, Business	Finance, Marketing, Business	Finance, Business, Sale force
I.T, Business, Sale force	Finance, I.T, Sale force	Finance, Business, Marketing
Finance, Business, Marketing	Finance, Business, Sale force	Finance, I.T, Marketing
Finance, I.T, Sale force	Finance, Marketing, Business	Marketing, Business, Sale force
Marketing, Business, Sale force	Finance, I.T, Business	Marketing, Business, Sale force

16. If, a sale force publish in the spring issue of a particular year, which of the following lists the articles that must publish in the fall issue of the year, not necessarily in the order given?

(A) A finance, an I.T, and a business
(B) A finance, a marketing, and a business
(C) A finance, a marketing, and a sale force
(D) A finance, a business, and a sale force
(E) A marketing, a business, and a sale force

17. If, two article types publish three times each in a particular year's issues, those types must be?

(A) a finance and an I.T
(B) a finance and a marketing
(C) a finance and a business
(D) a marketing and a sale force
(E) a business and a sale force

18. If a particular year's winter issue of the journal contains Marketing, then the spring issue that year could contain which of the following?

(A) Finance, Marketing, Business
(B) I.T, Marketing, Business
(C) I.T, Business, sale force
(D) Finance, Business, sale force
(E) Marketing, Business, sale force

19. If, during a particular year, two issues each contain a sale force and two issues each contain an Marketing, then the winter issue of that year must include

(A) A Finance
(B) AN I.T
(C) A Marketing
(D) A Business
(E) A sale force

20. If four of the five types of articles publish twice during a particular year and if one type publish only once, then the type that publish only once must be either

(A) A Finance or an I.T
(B) AN I.T or Marketing
(C) Marketing or a Business
(D) A Marketing or a sale force
(E) a Business or a sale force

21. If for a particular year the editor Decides to make the spring issue of the journal a special issue devoted entirely to three sale forces, but continues adhering to the conditions on the choice of articles, then which of the following lists the articles, not necessarily in the order given, that must publish in the winter issue of the year?

(A) A Finance, an I.T, and Marketing
(B) A Finance, an I.T, and a Business
(C) A Finance, Marketing, and a Business
(D) An I.T, Marketing, and a Business
(E) An Marketing, a Business, and a sale force

Test No 7

Question No 1 - 4

A conference organizer must select exactly three speakers to respond to special issue to be presented by an invited speaker. The three speakers will be selected from seven volunteers, of whom four—Irfan, Kamran, Liaquat, and Mohsin—are known to be positively to the speaker's theoretical point of view. The other three—Shabir, Tahir, and Usman—are known to be negatively to the speaker's theoretical point of view. In selecting the three speakers, the conference organizer must observe the following restrictions:

At least one positively speaker and at least one negatively speaker must be among those selected.
If Irfan is selected, Tahir cannot be selected.
If either Liaquat or Mohsin is selected, the other must also be selected.
If either Kamran or Usman is selected, the other must also be selected.

1. Which of the following could be the group of speakers selected?
   (A) Irfan, Liaquat, and Mohsin
   (B) Irfan, Shabir, and Tahir
   (C) Kamran, Shabir, and Usman
   (D) Liaquat, Shabir, and Tahir
   (E) Mohsin, Tahir, and Usman

2. If Irfan is selected as a speaker, which of the following must also be among those selected?
   (A) Liaquat
   (B) Mohsin
   (C) Shabir
   (D) Tahir
   (E) Usman

3. Which of the following is a pair of volunteers that can be selected together as speakers?
   (A) Irfan and Liaquat
   (B) Irfan and Shabir
   (C) Kamran and Liaquat
   (D) Mohsin and Shabir
   (E) Mohsin and Usman

4. The group of speakers selected must include either
   (A) Irfan or Shabir
   (B) Kamran or Shabir
   (C) Kamran or Tahir
   (D) Liaquat or Mohsin
   (E) Liaquat or Usman

Question No 5 - 10

A Doctor is making up an assignment duty for three nurse teams. Each team will be assigned to exactly one of three Shifts of the hospital: Shift 1, Shift 2, or Shift 3. Bach team will consist of two of the following nurses: Ghalia, Hina, Irfana, Kiran, Lubna, and Minahel. Each nurse will be on exactly one team.

Irfana, Lubna, and Minahel have each completed a special emergency-training program; Ghalia, Hina, and Kiran have not.

Ghalia, Hina, and Irfana each have at least three years of job experience; Kiran, Lubna, and Minahel do not.

The Doctor must observe the following restrictions in making up the assignment duty:

Each team must include at least one nurse who has completed the special emergency-training program. Each team must include at least one nurse who has at least three years of job experience.

Ghalia must be assigned either to Shift 1 or to Shift 2.

5. Which of the following assignment of nurse is permitted by the restrictions

	Shift I	Shift II	Shift III
(A)	GHALIA, KIRAN	HINA, LUBNA	IRFANA, MINAHEL
(B)	GHALIA, LUBNA	HINA, KIRAN	IRFANA, MINAHEL
(C)	HINA, MINAHEL	GHALIA, LUBNA	IRFANA, KIRAN
(D)	HINA, MINAHEL	IRFANA, LUBNA	GHALIA, KIRAN
(E)	IRFANA, KIRAN	GHALIA, HINA	LUBNA, MINAHEL

6. Which of the following must be true?

(A) Ghalia will be Kiran's partner.
(B) Ghalia will be Lubna's partner.
(C) Hina will be Lubna's partner.
(D) Irfana will be Kiran's partner.
(E) Irfana will be Minahel's partner.

7. Which of the following is a complete and accurate list of the nurses whom the duty officer can assign to be Minahel's partner?

(A) Ghalia (B) Hina (C) Lubna
(D) Ghalia, Hina (E) Lubna, Kiran

8. If Hina is assigned to Shift 2, which of the following must be true?

(A) Kiran is assigned to Shift 1.
(B) Kiran is assigned to Shift 3.
(C) Lubna is assigned to Shift 1.
(D) Minahel is assigned to Shift 2.
(E) Minahel is assigned to Shift 3.

9. The duty officer CANNOT make acceptable nurses that assigns

(A) Hina to Shift 1 and Minahel to Shift 3
(B) Irfana to Shift 1 and Lubna to Shift 2
(C) Kiran to Shift 1 and Ghalia to Shift 2
(D) Ghalia to Shift 2 and Hina to Shift 3
(E) Irfana to Shift 2 and Minahel to Shift 3

10. If Lubna is assigned to Shift 3, which of the following must be true?

(A) Hina is assigned to Shift 1.
(B) Irfana is assigned to Shift 2.
(C) Minahel is assigned to Shift 1.
(D) Ghalia is Lubna's partner.
(E) Ghalia is Minahel's partner.

Question No 11 - 13

The relative solidity of five materials — G, H, I, K, and L — is to be determined. One material is more hard than another if drawing an edge of the fist material across a surface of the second material produces a graze; other-wise, the first material is either equally hard or not as hard as the second. The following results have so far. been obtained:

G grazes H.

I grazes K.

H does not graze L.

11. Which of the following could be the five materials in order from the most solid to the lowest solid if no two of them are equally hard?

(A) G, I, L, K, H

(B)G, L, K, H, I
(C) I. G, H, K, L
(D) I, H, K, L, G
(E) L, G, K, I, H

12. If H grazes K, which of the following must be true?

(A) G is more solid than I.
(B) G is more solid than L.
(C) I is more solid than G.
(D) I is more solid than L.
(E) L is more solid than K.

13. If K grazes L, any of the following pairs of materials could be the same solidity as each other EXCEPT

(A) G and I
(B) G and K
(C) G and L
(D) H and L
(E) I and L

Question No 14 - 20

Seven musical persons—R, S, T, U, V, W, and X— must sit on a single two-sided long-playing record. For a given side, any choice of persons and any sequence of persons will be acceptable so long as the following conditions are met:

X must be first or last on a side;
R must be sit on the same side as V, either immediately before V or immediately after V.
S cannot be sit on the same side as U.
W can be sit on the same side as R, but neither immediately before nor immediately after R.
Side 1 cannot begin with U.
Each side must have at least two persons.
Each person must sit on the record exactly one time,

14. If side 2 begins with U, which of the following persons must sit on side 1?

(A) R (B) S (C) T (D) V (E) W

15. If side 1 has exactly three persons and the first is W, which of the following could be the other two persons on side 1 ?

(A) R followed by S (B) S followed by U (C)T followed by R
(D) U followed by X (E) X followed by T

16. Which of the following is a possible arrangement, in order, of the seven musical persons?

	Side 1	Side 2
(A)	R, M, U, X	S, W, J
(B)	X, W, R, M	U, S, J
(C)	S, W, J	M, R, X, U
(D)	J, W, M	R, S, X, U
(E)	U, R, X	W, M, S, J

17. If S and T are the only persons on side 1, which of the following is a possible order of the persons for side 2?

(A) R, V, W, X, U (B) U, R, W, V, X
(C) V, R, W, U, X (D) X, R, V, W, U
(E) X, V, W, U, R

18. If side 2 contains exactly, four persons, beginning with V and ending with U, which of the following must be true?

(A) R appears on side 1. (B)S appears on side 2.
(C) T appears on side 2. (D) W is the first person on side 1.
(E) X is the last person on side 1.

19. If W, R, and X are among the persons on side 1, which of the following must be true?

(A) S appears on side 1. (B) U appears on side 2.
(C) T is the first person on side 2.
(D) Side 2 has exactly three persons.
(E) Side 1 has exactly five persons.

20. If S, T, and X are all of the persons that sit on side 1, and side 2 begins with V, which of the following must be true?

(A) The second person on side 2 is U.
(B) The third person on side 2 is R.
(C) The third person on side 2 is W.
(D) The last person on side 2 is R.
(E) The last person on side 2 is W

Test No 8

Question No 1 - 4

Mehmood Trucking Company trips always begin in one of the five cities served by Mehmood—Noshara, Okara, Pashwar, Queta, and Rahim yar khan—and always end in one of these cities.

Mehmood drivers travel from city to city only on the routes listed in the mileage table below.

Noshara—Okara: 100 miles
Noshara—Pashwar: 100 miles
Noshara—Rahim yar khan: 200 miles
Pashwar—Queta: 200 miles
Queta—Rahim yar khan: 300 miles .

The routes listed above have no stretch or road in common.

The maximum distance an Mehmood driver can travel without making an overnight stop is 300 miles.

Overnight slops must be made in cities served by Mehmood.

1. Which of the following is a trip an Mehmood driver could make without an overnight stop?
   (A) From Noshara to Rahim yar khan to Queta
   (B) From Rahim yar khan to Queta to Pashwar
   (C) From Queta to Rahim yar khan to Noshara
   (D) From Noshara to Pashwar to Queta
   (E) From Queta to Pashwar to Noshara to Okara

2. What is the minimum number of overnight stops that an Mehmood driver who travels from Okara to Noshara to Rahim yar khan to Queta must make before arriving in Queta?
   (A) 1 (B) 2 (C) 3 (D) 4 (E) 5

3. Which of the following is a list of the cities to which Mehmood driver can travel from Pashwar, returning to Pashwar on the same day he or she left?
   (A) Noshara only
   (B) Okara only
   (C) Queta only
   (D) Both Noshara and Okara
   (E) Both Noshara and Queta

4. Which of the following accurately describes the possibilities for overnight stops during trips by Mehmood drivers that begin in Okara and end in Quaker-town after including two other cities served by Mehmood?
   (A) The trips can be made without an overnight stop.
   (B) It is not possible to make an overnight stop at Noshara.
   (C) Rahim yar khan is the only possible place to make an overnight stop.
   (D) If exactly two overnight stops are made on a trip, they can be made only at Pashwar and Rahim yar khan.
   (E) Any one of three cities—Noshara, Pashwar, Rahim yar khan—is a possible overnight stop.

Question No 5 - 10

Exactly five adults—R, S, T, U, and V—have gathered to play a sport called Trios. In each round of the sport, exactly three of these adults must play. The following are all the conditions:

No adult can play in three consecutive rounds.

No adult can sit out two consecutive rounds.

In any sport, each of the five adults must play in exactly three rounds.

5. If R, S, and T play in a first round, which of the following could be the trio who play in that sport's second round?

(A) R, S, U
(B) R, S, V
(C) R, T, U
(D) S, T, V
(E) S, U, V

6. If, in an individual sport, S, T, and U play in the first round and R, T, and U play in the third round, the players in the second round must be

(A) R, S, T
(B) R, S, U
(C) R, S. V
(D) S, T, V
(E) S, U, V

7. If, in an individual sport, T and V do not play in the first round, which of the following must be true?

(A) T plays in rounds three and four.

(B) V plays in rounds three and five.
(C) T und V both play in round Sour.
(D) T and V both play in round five.
(E) U and V both play in round four.

8. If, in an individual sport, R, T, and U play in the first round, and S, U. and V play in the second round, which of the following must play in the fourth round?

(A) R (B) S (C) T (D) U (E) V

9. If, in an individual sport, R, U, and V play in the first round, and if U and S play in the fourth round, which of the following CANNOT have played in the third round?

(A) R
(B) S
(C) T
(D) U
(E) V

10. If, in an individual sport, R, S, and U play in the first round and S, U, and V play in the third round, which of the following CANNOT play in the fourth round and must play in the fifth round?

(A) R
(B) S
(C) T
(D) U
(E) V

Question No 11 - 13

A pastry cook who is visiting a culinary school wishes to schedule three classes on pastry making—one at " 10 a.m., one at 2 p.m., and one at 6 p.m. Eight learner cooks—F, G, H, I, J, K, L, and M—who have registered to attend class will each be assigned to one of the three classes. Each class will contain either two or three learner cooks. The assignment of learner cooks to each class must conform to the following restrictions:

F must be assigned to a class to which only one other learner is assigned.

G must be assigned to the same class as L.

H must not be assigned to the same class as K.

I must be assigned to either the 10 a.m. class or the 6 p.m. class.

K must be assigned to a class that meets earlier in the day than the class to which J is assigned.

11. Which of the following is a possible assignment of learners to the classes?

	10 a.m.			2 p.m.			6 p.m.		
(A)	F	K		G	I	M	H	J	L
(B)	F	J		G	K	L	H	I	M
(C)	G	K	L	H	J	M	F	I	
(D)	G	K	L	F	H	J	I	M	
(E)	H	I	K	G	L	M	F	J	

12. If H and F are assigned to the 6 p.m. class, which of the following must be the group of learners assigned to the 10 a.m. class?

(A) G, I, L
(B) G, K, L
(C) G, L, M
(D) I, J, M
(E) I. K, M

13. If F and M are assigned to the 10 a.m. class, which of the following must be the group of learners assigned to the 6 p.m. class?

(A) G, I. L
(B) G, J, L
(C) H, I, J
(D) H, I, K
(E) I, K, M

Question No 14 - 19

An observatory is setting up a schedule for schoolchildren to view an astronomy practical. Five school groups— R, S, T, U, and V—will each view the practical exactly once during the four nights, Monday through Thursday, of its maximum brightness. Excellent viewing conditions are predicted for all four nights. The scheduling is subject to the following constraints:

At most two groups can view the practical on any given night.

Group R cannot view the practical on the same night that Group T.

Group S must view the practical on a night prior to the night when Group V views the practical.

Group U must view the practical on the same night that Group V does.

14. Which of the following is a possible schedule for viewing the practical?

	Monday	Tuesday	Wednesday	Thursday
(A)	T	R, S	U, V	---
(B)	S, T	---	R, U, V	---
(C)	S	R, T	---	U, V
(D)	R	U, V	S	T
(E)	R	S, T	U	V

15. If Group S views the practical on Wednesday, which of the following must be true?

(A) Group R views the practical on Monday.
(B) Group R views the practical on Wednesday.
(C) Group T views the practical on Tuesday.
(D) Group U views the practical on Thursday.
(E) Group V views the practical on Monday.

16. If Group U can view the practical neither on Wednesday nor on Thursday, which of the following must be true?

(A) Group R views the practical on Monday.
(B) Group S views the practical on Monday.
(C) Group S views the practical on Tuesday.
(D) Group T views the practical on Wednesday.
(E) Group T views the practical on Thursday.

17. If Group T views the practical on Thursday, which of the following could be true?

(A) Group V views the practical on Tuesday.
(B) Group U views the practical on Thursday.
(C) Group S views the practical on Thursday.
(D) Group S views the practical on Wednesday.
(E) Group R views the practical on Thursday.

18. Each of the following could be true EXCEPT:

(A) Group S views the practical on Monday.
(B) Group T views the practical on Wednesday.
(C) Group U views the practical on Tuesday.
(D) Group S and Group T view the practical on Tuesday.
(E) Group T and Group V view practical on Thursday.

19. If groups R, S, and T have each been scheduled for a different night, which of the following must be true?

(A) One of the three views the practical on Monday.
(B) One of the three views the practical on Thursday.
(C) Group R views the practical on a night prior to the night when Group T views it.
(D) Group S views the practical on a night prior to the night when Group R views it.
(E) Group T views the practical on a night prior to the night when Group U views it.

Test No 9

Question No 1 - 5

A professional cricket coach has agreed to give lessons to seven talented cricket players — Fahid, Gohar, Hamid, Israr, Junaid, Kashif, and Liaquat—and for this purpose has set aside an hour each weekday, Monday through Friday. The week's schedule of lessons must meet the following conditions:

Each player must be scheduled for exactly one of the five days.
Exactly two of the lessons must each be for two players, but those two joint lessons cannot be on consecutive days.
Fahid's lesson must be on a day earlier in the week than Gohar's lesson.
Hamid must be scheduled to be given his lesson by himself.
Israr's lesson must be on the day immediately before the day of Junaid's lesson.

1. Which of the following is an acceptable weekly schedule of lessons?

	Monday	Tuesday	Wednesday	Thursday	Friday
(A)	Fahid	Junaid, Kashif	Israr, Liaquat	Hamid	Gohar
(B)	Hamid	Fahid, Gohar	Israr	Junaid, Kashif	Liaquat
(C)	Israr	Junaid	Fahid, Hamid	Gohar	Kashif, Liaquat
(D)	Kashif, Liaquat	Hamid	Israr	Fahid, Junaid	Gohar
(E)	Liaquat	Junaid, Kashif	Hamid	Fahid, Israr	Gohar

2. If Hamid's lesson is scheduled for Wednesday, Israr's lesson must be scheduled for either
(A) Monday or Tuesday
(B) Monday or Thursday
(C) Monday or Friday
(D) Tuesday or Thursday
(E) Tuesday or Friday

3. The latest day in the week on which Fahid and Israr could be given a joint lesson is

(A) Monday (B) Tuesday (C) Wednesday (D) Thursday (E) Friday

4. If a joint lesson for Gohar and Junaid is scheduled earlier in the week than a joint lesson for Kashif and Liaquat, for which day must Hamid's lesson be scheduled?

(A) Monday (B) Tuesday (C) Wednesday (D) Thursday (E) Friday

5. If the two joint lessons are scheduled for as early in the week as possible, and Israr's and Junaid's lessons for as late in the week as possible, Liaquat could be given his lesson
(A) with Gohar
(B) with Israr
(C) with Junaid
(D) with Kashif
(E) by himself

Question No 6 - 11

The members of the Exam Control Committee and the members of the Administrative Committee are to be selected from exactly six qualified candidates. The six candidates are L, M, N, O, P, and Q. The following rules apply:

Each Committee must have exactly three members.

The two Committees must have at least one member in common.

L cannot be on a Committee with O.

If O is selected for a Committee, P must also be selected for that Committee.

6. If the members of the Exam Control Committee are selected first, which of the following could be those selected?

(A) L, M, and O
(B) L, O. and Q
(C) M, N, and O
(D) M, O, and P-
(E) N, O, and Q

7. If the two Committees have parallel terms of office, which of the following could be selected as the members of the Exam Control Committee and as the members of the Administrative Committee, respectively, for one such term of office?

(A) L. M. and N; O, P, and Q.
(B) L. N, and P; M, O, and Q
(C) L, O, and P; L, O. and Q
(D) M, N, and P; M, N, and O
(E) N, O, and P; O, P, and Q

8. If the members of the Exam Control Committee are M, N, and Q, and if the Kent Control Committee is to have as many members in common with the Exam Control Committee as the rules allow, the Administrative Committee must consist of ,

(A) L. M, and N
(B) M, N, and Q
(C) M, O. and Q
(D) N, P, and Q
(E) O, P, and Q

9. If L, M, and N make up the Exam Control Committee, and N, P, and Q make up the Administrative Committee, which of these Committee members could yield his or her place on a Committee to O without necessitating any other membership changes?

(A) L (B) M (C) N (D) P (E) Q

10. If L and O are each selected for a Committee, and only Q is selected for both Committees, which of the following must be true?

(A) M is selected for the same Committee as N.
(B) N is selected for the same Committee as P.
(C) N is selected for the same Committee as O.
(D) L is selected for a different Committee than P.
(E) O is selected for a different Committee than P.

11. If O and Q are both selected for the Exam Control Committee, and if L is selected for the Administrative Committee, each of the following pairs of people could be the other two members of the Administrative Committee EXCEPT

(A) M and N
(B) M and Q
(C) N and P
(D) N and Q
(E) P and Q

Question No 12 - 14

A HR manger is assigning five workers—F, M, H, I, and J—to three machines. Each machine has two terminals for workers. The assignment is subject to the following restrictions:

Workers sharing a machine must be of the same sex. .
A worker with skill M cannot share a machine with a worker who has no poor performance.
Workers I and J have skill M and no poor performance.
Worker F has an poor performance.
Workers M and H each have a broken leg and no other illness or disability.
Workers F, H, and J are male, and workers M and I are female.

12. If F shares a machine with H, which of the following is true?

(A) None of the workers shares a machine with any worker with skill M.
(B) None of the workers shares a machine with J.
(C) None of the workers shares a machine with any worker with a broken leg.
(D) A worker with a broken leg shares a machine with J.
(E) A worker with skill M shares a machine with J.

13. If a sixth worker is assigned to the remaining terminal, it must be true that the sixth worker

(A) is male
(B) is female or, if male, does not have a poor performance
(C) Has a broken leg
(D) Does not have a poor performance
(E) Has skill M

14. If Z, a male worker with skill M and no poor performance, is a newly admitted sixth worker who is also to be assigned to one of the three machines, Z must share a machine with

(A) F (B) M (C) H (D) I (E) J

Question No 15 - 21

A building has exactly six flats, numbered 1 through 6 from bottom to top. Each of exactly six families—R, S, T, U, V, and W—must-be assigned an entire flat for office space. The flats must be assigned according to the following conditions:

R must be on a lower flat than S.
T must be cither on the flat immediately above W's flat or on the flat immediately below W's flat.
U can be neither on the flat immediately above W's flat nor on the flat immediately below W's flat.
V must be on flat 4.

15. Which of the following is an acceptable assignment of families to flats, in order from flat 1 through flat 6?
(A) R, T, S, V, U, W
(B) S, T, W, V, R, U
(C) U, R. S, V, T, W
(D) U, W, T, V, R, S
(E) V, R, U, S, W, T

16. If S is on flat 5, which of the following must be true?
(A) R is on flat 1.
(B) R is on flat 3.
(C) T is on flat 1.
(D) U is on flat 6.
(E) W is on flat 2.

17. If W is on flat 2, any of the following could be true EXCEPT:
(A) R is on flat 3.
(B) R is on flat 5.
(C) T is on flat 1.
(D) U is on flat 5.
(E) U is on flat 6.

18. If U is on flat 3, which of the following is a pair of families that must be on flats one of which is immediately above the other?
(A) R and S (B) R and V (C) S and U (D) T and U (E) V and W

19. Each of the following is a pair of families that could be on flats one of which is immediately above the other EXCEPT
(A) R and T (B) R and W (C) S and T (D) T and V (E) U and V

20. If R is on flat 5, which of the following must be true?
(A) T is on flat 2. (B) T is on flat 3. (C) U is on flat 1.
(D) U is on flat 2. (E) W is on flat 3.

21. If R and T are on flats one of which is immediately above the other, which of the following could be on flats one of which is immediately above the other?
(A) R and U (B) R and W (C) S and W (D) T and V (E) U and V

Test No 10

Question No 1 - 5

Four girls—L, M, N, and O—and four boys—V, W, X, and Y—are the eight adults to be seated at a rectangular bench. Three of the adults are to sit on one side of the bench, three are to sit on the other side of the bench, one is to sit at the head of the bench, and one is to sit at the foot of the bench. The following restrictions on seating arrangements must be observed:

Adults of the same sex cannot sit next to each other on the same side of the bench.
The adult seated at the foot of the bench cannot be the same sex as the adult seated at the head of the bench.
X cannot be seated on the same side of the bench as N.
Y cannot be seated on the same side of the bench as O.

1. If Y is seated at the head of the bench and N is seated in the middle seat on one side of the bench, which of the following must be true?

(A) O is seated at the foot of the bench.
(B) V is seated at the foot of the bench.
(C) L is seated on the same side of the bench as N.
(D) W is seated on the opposite side of the bench from N.
(E) X is seated on the opposite side of the bench from N.

2. If O is to be seated at the head of the bench, each of the following could be seated at the foot of the bench EXCEPT

(A) M (B) V (C) W (D) X (E) Y

3. If W is seated at the foot of the bench, Y is seated in an end seat on one side of the bench, and N is seated in an end seat on the other side of the bench, where must X be seated?

(A) At the head of the bench
(B) In the middle seat on the same side of the bench as Y
(C) In an end seat on the same side of the bench as Y
(D) In the middle seat on the same side of the bench as N
(E) In an end seat on the same side of the bench as N

4. If X is seated at the head of the bench, V is seated in the middle seat on one side of the bench, and N is seated in the middle seat on the other side of the bench, which of the following can be true?

(A) L is seated at the foot of the bench.
(B) M is seated on the same side of the bench as N.
(C) O is seated on the same side of the bench as N.
(D) W is seated on the same side of the bench as V.
(E) Y is seated on the same side of the bench as V.

5. If X is seated at the foot of the bench, Y is sealed in the middle seat on one side of the bench, and N is seated in the middle seat on the other side of the bench, which of the following must be seated at the head of the bench?

(A) L
(B) M
(C) O
(D) V
(E) W

Question No 6 - 11

Two-way roads exist among the following cities surrounding a mountain area:

Between F and G	Between F and H	Between H and J	Between J and L
Between J and U	Between L and I	Between I and K	

There is also a one-way road between city I and city G; the permitted direction of travel is from I to G.
None of these roads intersect each other except at the cities.
There are no other cities or roads in the vicinity. Bicycles must follow the direction established for general traffic on roads.

6. To bicycle from K to G by road, it is necessary to go to or through city
   (A) F (B) I (C) J (D) L (E) U

7. If a rock slide temporarily makes the road between H and J impassable, then in order to reach F by road from U, a bicyclist would have to go to or through a total of how many other cities besides F and U ?
   (A) 2 (B) 3 (C) 4 (D) 5 (E) 6

8. If a bridge on the road between F and H is washed out, making the road impassable, a bicyclist would NOT be able to go by road from
   (A) G to F
   (B) G to K
   (C) I to F
   (D) I to K,
   (E) J to F

9. If a rock slide blocks a lane of the road from J to L, with the result that travel on the road can go only one way, from J to L, it will still be possible to go on a bicycle by road from I to
   (A) G and K but impossible to go to F, H, J. L, or U
   (B) G, K, and L but impossible to go to F. H, J, or U .
   (C) F, G, H, and L but impossible to go to K, J, or U
   (D) F, H, J, K, and L but impossible to go to G or U
   (E) F, G. H, J, K, L, and U

10. Assume that one lane of the road from H to J is Closed for repairs, with the result that travel on the road can go only one way, from J to H. It will then be possible to travel by road on a bicycle among any of the cities F, G, H. I, J, K, L, and U among which such travel was possible before the closing, if which of the following one-way temporary roads is constructed?
    (A) From F to U
    (B) From I to J
    (C) From K to J
    (D) From K to U
    (E) From L to I!

11. If F is lower and L is higher on the mountain than any of the other cities in the vicinity and G, I, and J are all at the same altitude, the distance by road going from U to K will be shortened *by* building a two-way road along a level straight line between
    (A) J and G
    (B) J and F
    (C) I and F
    (D) I and J
    (E) L and G

Question No 12 - 15

Seven women—F, G, H, I, J, K, and L are all the women present at a party. All of them join distinct communicational groups that form during the party and that consist of two, three, or four women at a time. At any time during the party, each of the women present is considered to the a member of exactly one of the communicational groups. During the party the following conditions are satisfied:

F can never be in the same communicational group as I.
J must be in a communicational group that includes either I or L, but J cannot be in a communicational group with both I and L.
L must be in a communicational group that consists of exactly three women.

12. Which of the following lists three communicational groups that can exist at the same time during the party?

(A)	F and I	G, J and L	H and K
(B)	F and J	H and I	G, L and K
(C)	F and K	H and I	G, J and L
(D)	F and L	I and K	H, G and J
(E)	F, K and L	I and G	H and J

13. If, at a certain point during the party, H, J, and L are members of three distinct communicational groups, I must at that point be in a communicational group that includes

(A) F (B) H (C) J (D) K (E) L

14. If, at a certain point during the party, a group of three women and a group of four women have formed and L is in the same communicational group as K, which of the following must at that point be in the group with L and K ?

(A) F
(B) G
(C) H
(D)I
(E) J

15. If, at a certain point during the party, one of the communicational groups consists only of G, H, and L, at that point F must be part of a group of exactly

(A) two women, whose other member is J
(B) two women, whose other member is K
(C) four women, whose other members include I
(D) four women, whose other members include J
(E) four women, whose other members include K

Question No 16 - 22

At an exhibition, exactly five sculptures are to be displayed in a hall with exactly five show cases, arranged along a single wall and numbered consecutively 1 through 5. The sculptures are to be selected from a total of eight sculptures—F, G, H, I, J, K, L, and O are displayed, one sculpture on each show case, according to the following conditions:

Either F or O or both must be selected.
If F is selected, F must be on show case 1.
Hither J or K must be on show case 3.
If L is selected, H must also be selected, and L and H must then be on show cases that are immediately adjacent to one another.

16. Which of the following is an acceptable selection of sculptures to be displayed on show cases 1 through 5?

	1	2	3	4	5
(A)	F	J	L	H	I
(B)	G	L	K	O	I
(C)	H	L	K	J	O
(D)	L	H	J	K	F
(E)	O	G	I	H	L

17. If K is on show case I, which of the following must be true?

(A) H is on show case 4. (B) J is on show case 3. C) L is on show case 2.
(D) L is on show case 4. (E) O is on show case 5.

18. If L is on show case 5, which of the following pairs of sculptures can be on show cases that are immediately adjacent to each other?

(A) F and H (B) I and G (C) I and H (D) J and L (E) O and J

19. If O is on show case 4, any of the following can be on show case 5 EXCEPT

(A) G (B) H (C) I (D) J (E) L

20. If L is on show case 2, which of the following sculptures must be selected?

(A) F (B) G (C) J (D) K (E) O

21. If H is not selected and J is on showcase 1, which of the following lists, in alphabetical order, those sculptures that must also be selected?

(A) F, I, L, and O (B) G, I, K, and L (C) G, I, K, and O
(D) G, K, L, and O (E) I, K, L, and O

22. If, “I” is displayed on a show case immediately adjacent to a show case on which J is displayed and immediately adjacent to a show case on which K is displayed, which of the following must be true?

(A) G is on either show case 4 or show case 5.
(B) I is on either show case 2 or show case 4.
(C) J is on either show case 1 or show case 3.
(D) K is on either show case 3 or show case 5.
(E) O is on either show case 2 or show case 4.

Test No 11

Question No 1 - 5

Ten different fabrics are being displayed on show cases along one wall of a store. The show cases are next to each other in a straight line and are numbered consecutively from one to ten. On each show case is a single bolt of a different fabric. One fabric is gray, two fabrics are different shades of blue, three fabrics are different shades of tan, and the remaining four fabrics are different shades of orange.

Tan fabrics are on show cases one and ten.
The two blue fabrics are on show cases next to each other.
No orange fabric is on a show case next to a blue fabric.
No tan fabric is on a show case next to the gray fabric.

1. If a tan fabric is on show case two and orange fabrics are on show cases three and four, the gray fabric must be on which of the following show cases?

   (A) Five (B) Six (C) Seven (D) Eight (E) Nine

2. If the four orange fabrics are on four consecutive show cases, the gray fabric and one of the blue fabrics could be on which of the following show cases, respectively?

   (A) Two and three (B) Three and four
   (C) Four and five (D) Five and six
   '(E) Six and seven

3. Which of the following are colors of fabrics that CANNOT be on show cases two, three, and four respectively.?

   (A) Tan, orange, gray
   (B) Tan, blue, blue
   (C) Blue, blue, tan
   (D) Orange, orange, gray
   (E) Orange, orange, orange

4. If a tan fabric is on show case three and a blue fabric is on show case four, the gray fabric must be on which of the following show cases?

   (A) Two (B) Five (C) Six
   (D) Seven (E) Nine

5. If the gray fabric is on show case five and a blue fabric is on show case four, which of the following must be true?

   (A) A orange fabric is on show case two.
   (B) A orange fabric is on show case nine.
   (C) A tan fabric is on show case six.
   (D) A tan fabric is on show case seven.
   (E) A tan fabric is on show case eight.

Question No 6 - 11

A group of eight people is going camping in Van 1, Van 2, and Van 3. The group consists of two women — V and S—and six girls—F, G, H, I, J, and T. Van assignments will be made as follows:

There will be no more than three persons in a Van.
V will be in Van I.
V will not be in a Van with her daughter I, and S will not be in a Van with her daughter J.
F, G, and H, who are close friends, will be in a Van together.

6. Which of the following can be in Van 1?

(A) F
(B) G
(C) H
(D) I
(E) S

7. If F is in Van 2, which of the following must be true?

(A) H is in Van 3.
(B) I is in Van 3.
(C) J is in Van 2.
(D) T is in Van I.
(E) S is in Van 3.

8. If the two women are together in a Van, which of the following is a pair of girls who must be together in a Van?

(A) F and J (B) G and T (C) H and I
(D) I and J (E) J and T

9. If S is in Van 2, which of the following must be in the same Van as V?

(A) F
(B) G
(C) I
(D) J
(E) T

10. If G is in Van 3 and the two women are not in the same Van as each other, the people in Van 2 can be

(A) H and T only
(B) S and T only
(C) F, H, and I
(D) I, J, and S
(E) I, T, and S

11. If V and T are together in a Van, it is possible that

(A) F and J are together in a Van
(B) I and T are together in a Van
(C) I and S are the only people in Van 2
(D) J and S are the only people in Van 3
(E) T and V are the only people in Van 1

Question No 12 - 15

A boy uses a motor cycle to pick up aids of unsold food and garmenting from stores and to deliver them to locations where they can be distributed. He drives only along a certain network of roads.

In the network there are two-way roads connecting each of the following pairs of points: A with B, A with C, A with E, B with F, C with G, E with F, and F with G. There are also one-way roads going from B to D, from C to B, and from D to C. There are no other roads in the network, and the roads in the network do not intersect.

To make a trip involving pickups and deliveries, the boy always takes a route that for the whole trip passes through the fewest of the points A through G, counting a point twice if he boy passes through it twice.

The boy's house is at point C. Aids can be picked up at a General Store at point A, a garmenting store at point E, and a bakery at point D, Deliveries can be made as needed to a tutoring center at point B, a distribution center at point F, and a supermarket at point G.

12. If the boy starts at the General Store and next is to go to the supermarket, the-first intermediate point of his route passes through must be

(A) B
(B) C
(C) E
(D) F
(E) G

13. If, starting from house, the boy next is to make pickups for the supermarket at the General Store and the bakery (in either order), the first two intermediate points on his route, beginning with the first, must be

(A) A and B
(B) A and C
(C) B and A
(D) B and D
(E) D and B

14. If, starting from the garmenting store, the boy next is to pick up bread at either the General Store or the bakery (whichever stop makes his route go through the fewest of the points) and then is to go to the supermarket, the first two points be reaches after the garmenting store, beginning with the first, must be

(A) A and B
(B) A and C
(C) D and B
(D) F and B
(E) F and D

15. If the boy is to make a trip starting at the supermarket, next going to the bakery for a pickup, and then ending at the distribution center, the first two intermediate points on his route, beginning with the first, can be

(A) C and A
(B) C and D
(C) D and B
(D) F and B
(E) F and E

Question No 16 - 19

Each of six automated jobs, numbered 1 through 6, takes one full month to complete. No time elapses between the completion of any of the six jobs and the beginning of another job. The group of six job, must be completed in the shortest possible time period, subject only to the following restrictions:

Jobs 1 and 2 must both be completed before any of the other jobs can be begun.
Job 3 must be completed before job 4 can be begun.
At any one time, no more than one job can be performed, except that jobs 4 and 5 can be performed concurrently.

16. Which of the following jobs could be the second job performed?
(A) 2
(B) 3
(C) 4
(D) 5
(E) 6

17. The shortest possible time period in which the group of six jobs can be completed is
(A) Two months
(B) Three months
(C) Four months
(D) Five months
(E) Six months

18. Which of the following CANNOT be true of any acceptable ordering of jobs?
(A) Job 1 is performed before job 2.
(B) Job 3 is performed before job 6.
(C) Job 4 is performed before job 6.
(D) Job 5 is performed before job 3.
(E) Job 6 is performed before job 3.

19. If job 6 is performed as early in the order of jobs as is permissible, then job 6 is performed
(A) first
(B) second
(C) third
(D) fourth
(E) fifth

Test No 12

Question No 1 - 5

On a city there are exactly seven places: K, L, M, N, O, P, and Q. All existing and projected roads on the city are two-way and run perfectly straight between one place and the next. All distances by road are distances from the main square of one place to the main square of another place. L is the same distance by road from K, M, and N as P is from O and Q. The following are all of the currently existing roads and connections by road on the island:

Road I goes from K to M via L.

Road 2 goes from L directly to N.

The Triangle Road goes from O to P, from P on to Q, and from Q back to O.

Any main square reached by two roads is an interchange between them, and there are no other interchanges between roads.

1. Which of the following is a place from which exactly two other places can be reached by road?

   (A) K (B) L (C) M (D) N (E) O

2. It is possible that the distance by road from O to P is unequal to the distance by road from

   (A) K to L (B) L to M (C) L to N (D) O to Q (E) P to Q

3. Which of the following is a pair of places connected by two routes by road that have no stretch of road in common?

   (A) K and L (B) L and M (C) M and N (D) N and O (E) O and P

4. If a projected road from K to P were built, then the shortest distance by road from N to O would be the same as the shortest distance by road from Q to

   (A) K (B) L (C) M (D) O (E) P

5. If two projected roads were built, one from K directly to P and one from M directly to Q, then each of the following would be a complete list of the places lying along one of the routes that a traveler going by road from L to O could select EXCEPT

   (A) K, P (B) K. Q (C) M. Q (D) K, P, Q (E) M, Q, P

Question No 6 - 11

At a conference, exactly seven scholars—Qamar, Rizwan, Sarfraz, Tahir, Usman, Valeed, and Waqas—are to speak. In the schedule for the conference, there are seven time slots available for scholars, and the time slots are numbered consecutively 1 through 7. Exactly one scholar must be assigned to each time slot according to the following conditions:

Qamar must speak immediately before or immediately after Tahir speaks.
Tahir must speak sometime before Rizwan speaks.
Sarfraz must speak in either time slot -1 or time slot 7.
Valeed must speak in time slot 4.

6. Which of the following must be true?

(A) Qamar speaks sometime before Rizwan speaks.
(B) Qamar speaks sometime before Valeed speaks.
(C) Sarfraz speaks sometime before Tahir speaks.
(D) Valeed speaks sometime before Rizwan speaks.
(E) Waqas speaks sometime before Valeed speaks.

7. If Rizwan speaks immediately before Valeed speaks which of the following could be true?

(A) Qamar speaks in time slot 5.
(B) Sarfraz speaks in time slot 1.
(C) Tahir speaks in time slot 3.
(D) Usman speaks in time slot 2.
(E) Waqas speaks in time slot 6.

8. If Rizwan speaks sometime before Sarfraz speaks which of the following must be true?

(A) Qamar speaks sometime before Usman speaks.
(B) Rizwan speaks sometime before Valeed speaks.
(C) Tahir speaks sometime before Valeed speaks.
(D) Usman speaks sometime before Rizwan speaks.
(E) Waqas speaks sometime before Qamar speaks.

9. If Usman is to speak in time slot 2, there will be a total of how many scheduling possibilities from which to select the schedule of scholars?

(A) One
(B) Two
(C) Three
(D) Four
(E) Six

10. If Waqas speaks in time slot 7, any of the following pairs of scholars could speak-in time slots immediately adjacent to each other EXCEPT

(A) Qamar and Rizwan
(B) Rizwan and Usman
(C) Sarfraz and Qamar
(D) Sarfraz and Tahir
(E) Valeed and Usman

11. If Usman speaks sometime before Qamar speaks which of the following must be true?

(A) Sarfraz speaks sometime before Usman speaks.
(B) Tahir speaks sometime before Valeed speaks.
(C) Usman speaks sometime before Waqas speaks.
(D) Valeed speaks sometime before Rizwan speaks.
(E) Waqas speaks sometime before Sarfraz speaks.

Question No 12 - 15

An artist needs to arrange seven pictures on the wall of a room in an art gallery. The pictures must be placed in seven consecutive positions, numbered 1 through 7, along the wall. Four of the pictures—F, G, H, and I —depict buildings, whereas three of the pictures—S, T, and U—depict naturals. The order in which the pictures are arranged along the wall must meet the following conditions:

No two pictures of buildings can be placed next to each other.
I cannot immediately precede S.
H must immediately precede T.
If G is in the third position, then S must be in the second position.

12. Which of the following is an acceptable arrangement of the pictures along the wall, from position 1 to position 7?

(A) F, S, G, T, I, U, H
(B) H, T, I, U, G, S, F
(C) I, U, G, F, S, H, T
(D) S, F, U, H, T, G, I
(E) U, S ,G, H, T, F, I

13. Which of the following lists the three positions on the wall in which H could be placed?

(A) First, second, and third
(B) First, third, and fifth
(C) Third, fourth, and fifth
(D) Third, fifth, and sixth
(E) Third, fifth, and seventh

14. If G is in the third position, U must be placed in which of the following positions?

(A) First
(B) Second
(C) Fourth
(D) Fifth
(E) Sixth

15. If S must be placed on the wall in a higher numbered position than T and in a lower numbered position than U, F must be placed in which of the following positions?

(A) First
(B) Second
(C) Third
(D) Fourth
(E) Fifth

Question No 16 - 19

Five boys—P, Q. R, S, and T—have gathered to play a game called "forest and trees. Four players play in each round, with one boys sitting out. Rounds are played by two competing teams of two boys each. The players have agreed on the following rules of participation:

No two players can play as a team in two consecutive rounds of the game.
After a round is concluded, one' boys from the losing team in that round must sit out the next round of the game.
After a round is concluded, the boys who has sat out that round and a boys from the winning team in that round join to form the team that is known as "the forest" for the next round.
After a round is concluded, one boys from the losing team in that round and one boys from the winning team in that round join to form the team that is known as "the trees" for the next round.
No round of the game can end in a tie.
Because R and T are perceived as having the greatest individual strengths as players, R and T can never play on the same team.

16. If, in the first round of a game, P and T are the winning team and R sits out, which of the following must be a team in the second round of that game?

(A) P and R
(B) Q and R
(C) Q and S
(D) R and S
(E) S and T

17. If, in the first round of a game. Q and R are the winning team and P sits out, which of the following could be a team in the second round of that game?

(A) P and S -
(B) P and T
(C) Q and R
(D) Q and T
(E) S and T

18. If P and S are the winning team in the first round, each of the following could be a member of the forest during the second round EXCEPT

(A) P
(B) Q
(C) R
(D) S
(E) T

19. If S sits out the first round, each of the following could be a team in the first round EXCEPT

(A) P and Q
(B) P and R
(C) P and T
(D) Q and R
(E) Q and T

Test No 13

Question No 1 - 5

A woman plans to plant exactly six kind of trees: orange. apple, mango, banana, lemon, and date. She places six pots side by side in a straight line and numbers the pots consecutively from 1 to 6, left to right. She will plant only one kind of tree in each pot. The arrangement of the trees is subject to the following conditions:

Orange must be planted in some pot to the left of banana.
Lemon must be planted in some pot to the left of date.
Apple cannot be planted in pot 1.
Mango must be planted next to orange;

1. Which of the following arrangements of trees from pot 1 through 6, respectively, conforms to the conditions above?
   (A) Date, orange, mango, lemon, banana, apple
   (B) Apple, lemon, date, mango, orange, banana
   (C) Lemon, apple, date, banana, mango, orange
   (D) Orange, banana, lemon, date, apple, mango
   (E) Mango, orange, lemon, apple, banana, date

2. If apple is planted in some pot to the right of banana, which of the following must be true?
   (A) Apple is planted in some pot to the right of orange.
   (B) Apple is planted in some pot to the right of lemon.
   (C) Apple is planted in some pot to the right of date.
   (D) Banana is planted in some pot to the left of lemon.
   (E) Banana is planted in some pot to the left of mango.

3. If date is planted in some pot to the left of orange, which of the following must be true?
   (A) Date is planted in some pot to the left of apple.
   (B) Date is planted in some pot to the left of mango.
   (C) Orange is planted in some pot to the left of apple.
   (D) Orange is planted in some pot to the left of mango.
   (E) Orange is planted in some pot to the left of lemon.

4. If banana is planted in some pot to the left of lemon, lemon could be planted in which of the following pots?
   (A) 1 (B) 2 (C) 3 (D) 4 (E) 6

5. If orange is planted next to date, which of the following must be true?
   (A) Lemon is planted in pot 1.
   (B) Apple is planted in pot 2.
   (C) Mango is planted in pot 3.
   (D) Orange is planted in pot 4.
   (E) Date is planted in pot 5.

Question No 6 - 10

All mails in a large province are transmitted by means of a mail network that connects eight cities—F, G, H, I, J, K, L, and M. All of the connections are two-way, so that mails can be sent back and forth between any two connected cities. Any given mail enters and leaves a given city at most once. The cities are connected only in the following way:

F is connected to G and to I.

H is connected to G and to I.

J is connected to H and to L.

K is connected to H, to L, and to M.

6. The path followed by mails sent from L to M must include which of the following cities?

(A) F (B) G (C) H (D) J (E) K

7. Mails sent from F to J can go along any of the following paths EXCEPT

(A)F to G to H to J
(B)F to I to H to J
(C)F to G to H to I to J
(D)F to G to H to K to L to J
(E) F to I to H to K to L to J

8. Which of the following specifies in its entirety a sequence, from first to last, of cities through which a mail from M to I can pass?

(A) M, F. I
(B) M, K, F, I
(C) M, K, L, I
(D) M, K, H, G, I
(E) M, K, L, J, H. I

9. What is the minimum number of cities, excluding the originating and destination cities, through which a mail from I to K must pass?

(A) One (B) Two (C) Three (D) Four (E) Five

10. Disconnecting which of the following cities from every city to which it is connected would leave exactly one of the other cities unconnected to the rest of the mail network?

(A) F
(B) G
(C) J
(D) K
(E) M

Question No 11 - 14

Three teachers—Rehan, Saeed, and Valeed—will be traveling in a van with five students—Fareed, Habib, Jahangir, Liaquat, and Muneeb. The van has a driver's seat and one passenger seat in the front and two big seats behind the front seats, one big seat behind the other. Each big seat has seats for exactly three people. Everyone must sit in a seat or on a big seat, and seating is subject to the following restrictions:

A teacher must sit on each big seat.
Either Rehan or Saeed must sit in the driver's seat.
Jahangir must sit immediately beside Muneeb.

11. Which of the following can sit in the front passenger seat?

(A) Jahangir
(B) Liaquat
(C) Rehan
(D) Saeed
(E) Valeed

12. Which of the following groups of three can sit together on a big seat?

(A) Fareed, Jahangir, and Muneeb
(B) Fareed, Jahangir, and Valeed
(C) Fareed, Saeed, and Valeed
(D) Habib, Lupe. and Saeed
(E) Liaquat, Muneeb, and Rehan

13. If Fareed sits immediately beside Valeed, which of the following CANNOT be true?

(A)Jahangir sits immediately beside Saeed.
(B)Liaquat sits immediately beside Valeed.
(C)'Habib sits in the front passenger seat.
(D)Fareed sits on the same big seat as Habib.
(E) Habib sits on the same big seat as Rehan.

14. If Saeed sits on a big seat that is behind where Jahangir is sitting, which of the following must be true?

(A) Habib sits in a seat or on a big seat that is in front of where Muneeb is sitting.
(B) Liaquat sits in a seat or on a big seat that is in front of where Fareed is sitting.
(C) Fareed sits on the same big seat as Habib,
(D) Liaquat sits on the same big seat as Saeed.
(E) Muneeb sits on the same big seat as Valeed.

Question No 15 - 18

A developer will build five houses in a certain town on a street that currently has no houses on it. The developer will select from seven different styles of houses—F, G. H, I, J, K. and L. The town's planning committee has placed the following restrictions on the developer:

No style can be selected for more than one house.

Either style I must be selected or style L must be selected, but both cannot be selected.

If style K is selected, then style H must also be selected.

If style G is selected, then style I cannot be selected.

15. If style G is one of the styles selected for the street, then which of the following styles must also be selected?

(A)F (B) I (C) J (D) K (E) L.

16. Which of the following is an acceptable combination of styles that can be selected for the street?

(A)F, G, H, J. K
(B) F, G, J, K, L
(C) F, H, J H. L
(D) G. H, I, J. K
(E) H. I, J, K, L

17. If style L is one style not selected for the street, then the other style NOT selected must be which of the following? -

(A)F (B) G (C) H (D) I (E) J

18. If F, G. and J are three of the styles selected for the street, then which of the following must be the other two styles selected?

(A) H and I
(B) H and K
(C) H and L
(D) I and K
(E) K and L

Test No 14

Question No1 - 4

In a certain target-firing game, a group must fire at seven targets. Exactly one fired is allowed for shooting at-each target. The targets are numbered in consecutive order from 1 to 7. The game is being played by a three-member group consisting of players M, N, and O, who must observe the following rules:

The seven targets must be fired at in consecutive order, starting with target 1.
Both M and O can fire at odd-numbered and even-numbered targets.
N cannot fire at even-numbered targets. M and N must each fire at no fewer than two targets.
O must take exactly one fired. M cannot take three consecutive fires.

1. If all group members take exactly their requited minimum number of fires before any group member takes an additional fired, then the next target to be fired at in the game after the required minimum of fires is target

   (A) 3 (B) 4 (C) 5 (D) 6 (E) 7

2. If N takes the same total number of fires during the game as one other group member, then which of the following is true?

   (A) M must fire at even-numbered targets only.
   (B) N must fire at all of the odd-numbered targets.
   (C) O must fire at an odd-numbered target.
   (D) M and O must each fire at exactly one odd-numbered target.
   (E) Either M or O, but not both, must fire at exactly one odd-numbered target.

3. If all odd-numbered but no even-numbered targets are hit during the game, then all of the following are possible total numbers of hits for each player at the end of the game EXCEPT

   (A) M = 2; N= 1; O = 1
   (B) M= 1; N=2; O= 1
   (C) M = 0; N = 3; O = 1
   (D) M = 2; N = 2; O = 0
   (E) M= 1; N = 3; O = 0

4. If, during the game, M and N each hit exactly half of the targets that each shoots at, then the lowest possible total number of hits that the group could make in the game is

   (A) 1 (B) 2 (C) 3 (D) 4 (E) 5

Question No 5 - 10

Two maps are being designed. One will show single roads; the other will show double roads. There are three single roads and four double roads, and each line or route must be represented on the maps by a color used to represent it only. The colors available to the designer of the maps are brown, gold, olive, pink, white, magenta, and silver. Any assignment of colors to lines and routes is acceptable provided the following conditions are met:

Brown cannot be used on the same map as pink.
Olive cannot be used on the same map as white, nor on the same map as silver

5. If brown is used on the single roadmap, which of the following must be true?
   (A) Olive is used on the single roadmap.
   (B) Silver is used on the single roadmap.
   (C) Pink is used on the double roadmap.
   (D) Gold is used on the double roadmap.
   (E) White is used on the double roadmap.

6. If white is used on the double roadmap, which of the following colors must be used on the single roadmap?
   (A) Brown
   (B) Olive
   (C) Pink
   (D) Magenta
   (E) Silver

7. If silver and pink are used on the single road map, the third color used on that map must be
   (A) brown
   (B) gold
   (C) olive
   (D) white
   (E) magenta

8. If white and brown are used on the double roadmap, which of the following could be the other two colors used on that map?
   (A) Gold and pink
   (B) Gold and magenta
   (C) Gold and silver
   (D) Olive and magenta
   (E) Pink and silver

9. If gold is not used on the same map as brown, nor on the same map as silver, which of the following must be true?
   (A) Brown is used on the single roadmap.
   (B) Brown is used on the double roadmap.
   (C) Gold is used on the same map as reel.
   (D) Pink is used on the same map as olive.
   (E) Magenta is used on the same map as white.

10. There will be only one acceptable assignment of colors to each of the two maps if which of the following conditions is added to the original ones?
   (A) Pink and magenta must be used on the single road map.
   (B) Gold and pink must be used on the double road map.
   (C) Brown cannot be used on the same map as gold.
   (D) Gold cannot be used on the same map as silver.
   (E) Pink cannot be used on the same map as white.

Question No 11 - 14

Researchers know that exactly six prehistoric iron-working firms—F, G, H, I, J, and K—existed in the Windham area. Recently, the researchers have discovered three devices— 1,2, and 3—that they know must have been made by ironworkers in the Windham area. The researchers would like now to determine the specific firm at which each device was made. The devices are different enough in composition and style to leave no doubt that each was made at a different firm. In addition, the researchers have established the following:

If any or the devices was made at F, none or them was made at I.
If any of the devices was made at G, none of them was made at H.
One of the devices was made, at J.
Device 2 was not made at- K.
Device 3 was made neither at H nor at K.

11. If Device 1 was made at I, Device 3 could have been made at which of the following?

(A) F
(B) G
(C) H
(D)I
(E) K

12. Device 1, Device 2, and Device 3, respectively, could have been made at

(A) F, H, and K
(B) G, K, and J
(C) I, J, and H
(D) J, F, and I
(E) J, H, and F

13. If neither F nor I was a firm at which any of the device was made, which of the following must be true?

(A) Device 1 was made at K.
(B) Device 2 was made at H.
(C) Device 2 was made at J.
(D) Device 3 was made at G.
(E) Device 3 was made at J.

14. The researchers could determine exactly which device was made at which firm if they knew that the only three firms at which devices were made were

(A) F, G, and J
(B) F, J, and K
(C) G, I, and J
(D) H, I, and J
(E) H, J, and K.

Question No 15 - 18

Seven boys—Faheem, Jamshaid, Kashif, Muneer, Rizwan, Shahid, and Tuqeer—are eligible to enter a spelling contest. From these seven, two groups must be formed, a blue group and a yellow group, each group consisting of exactly three of the boys. No boy can be selected for more than one group. Group selection is subject to the following restrictions:

If Muneer is on the blue group, Kashif must be selected for the yellow group.
If Faheem is on the blue group, Rizwan, if selected, must be on the yellow group.
Rizwan cannot be on the same group as Shahid.
Jamshaid cannot be on the same group as Kashif.

15. Which of the following can be the three members of the blue group?

(A) Faheem, Jamshaid, and Kashif
(B) Faheem, Rizwan, and Tuqeer
(C) Jamshaid, Kashif, and Tuqeer
(D) Kashif, Muneer, and Rizwan
(E) Muneer, Rizwan, and Tuqeer

16. If Muneer and Faheem are both on the blue group, the yellow group can consist of which of the following?

(A) Jamshaid, Kashif, and Rizwan
(B) Jamshaid, Shahid', and Tuqeer
(C) Kashif, Rizwan, and Shahid
(D) Kashif, Rizwan, and Tuqeer
(E) Rizwan, Shahid, and Tuqeer

17. If Muneer is on the blue group, which of the following if selected, must also be on the blue group?

(A) Faheem
(B) Jamshaid
(C) Rizwan.
(D) Shahid
(E) Tuqeer

18. If Faheem is selected for the blue group and Tuqeer is not selected for either group, then which of the following CANNOT be a member of the yellow group?

(A) Jamshaid
(B) Kashif
(C) Muneer .
(D) Rizwan
(E) Shahid

Test No 15

Question No 1 - 4

A shopkeeper is preparing gift boxes of dress. Each box will contain exactly two kinds of summer dress to be selected from I, J, and K, and exactly three kinds of winter dress to be selected from L, M, N, O, and U, with the following restrictions:

J cannot be in the same gift box as U.

L cannot be in the same gift box as O.

M cannot be in the same gift box as U.

1. If J is included in a gift box, which of the following is a kind of dress that must also be included?
(A) I (B) K (C) L (D) M (E) O

2. If K is not included in a particular gift box, any of the following kinds of dresses can be included EXCEPT
(A) L (B) M (C) N (D) O (E) U

3. Which of the following kinds of dresses must be included in each of the gift boxes?
(A) I (B) J (C) K (D) L (E) N

4. If U is included in a gift box, the box must also include which of the following kinds of dress?
(A) I and J (B) I and K (C) J and K
(D) L and N (E) N and O

Question No 5 - 10

In a flat, five workers making a plan for cooking food for each working day, Monday through Friday, during a single week. Exactly five workers—R, S, T, U, and V—are available. The administration must assign exactly two workers to work each day of that week according to the following conditions:

Each of the workers must work at least once.

None of the workers can work on three consecutive days.
S must work on Monday.
U must work on Thursday and on Friday.
R cannot work on any day on which S works.

5. Any of the following workers could be assigned to work on Wednesday EXCEPT

(A) R
(B) S
(C) T
(D) U
(E) V

6. If R is assigned to work on exactly three days of the week, those days must include

(A) Monday and Wednesday
(B) Tuesday and Wednesday
(C) Tuesday and Friday
(D) Wednesday and Friday
(E) Thursday and Friday

7. If S is assigned to work on exactly four days of the week, which of the following could be the pair of workers assigned to work on Wednesday?

(A)' R and T
(B) R and U
(C) S and T
(D) S and V
(E) U and V

8. If R is assigned to work whenever and only when U is assigned to work, which of the following could be true?

(A) R is assigned to work on Monday.
(B) R is assigned to work on Wednesday.
(C) S is assigned to work on Friday.
(D) T is assigned to work on Friday.
(E) V is assigned to work on Tuesday.

9. If S is assigned to work on only one day and T is assigned to work on exactly four days, which of the following pairs of workers must be assigned to work on Wednesday?

(A) R and T
(B) R and V
(C) S and T
(D) T and U
(E) T and V

10. If each worker is assigned to work exactly twice which of the following must be true?

(A) Either R or S is assigned to work on at least one of the days on which U is assigned to work.
(B) S is assigned to work on both of the days on which T is assigned to work.
(C) T is assigned to work on Tuesday.
(D) T is assigned to work on one of the days on which S is assigned to work and on one of the days on which R is assigned to work.
(E) V is assigned to work on two consecutive days

Question No 11 - 14

A Doctor is doing an informal study of the growth of exactly seven dogs—G, N, O, U, V, W, and X—all six-month-old doggies from the same area . The Doctor assistant collected the following comparative data concerning the dogs heights:

V is taller' than X.

U is taller than W.

G is taller than X.

O is taller than N, but X is taller than O.

None of the seven dogs is exactly the same height as any other dog from the area.

11. Which of the following could be the correct ordering of the dogs from tallest to shortest?

(A) G, V, X. N, U. O, W
(B) U, W, G, X, O, V, N
(C) V, G, X, O, U, N, W
(D) V, X, U, O, W, G, N
(E) W, V. G, X, O, U, N

12. Which of the following must be true?

(A) G is taller than O.
(B) G is taller than V.
(C) U is taller than O.
(D) W is taller than N.
(E) X is taller than W.

13. If W is taller than X which of the following must be true?

(A) U is taller than G.
(B) U is taller than O.
(C) U is taller than V.
(D) V is taller than G.
(E) X is taller than U.

14. If X is taller than U, any of the following can be true EXCEPT:

(A) N is taller than U.
(B) U is taller than O.
(C) U is taller than V.
(D) W is taller than N.
(E) W is taller than O.

Question No 15 - 18

A garden plot consists of seven parallel rows of trees, the rows numbered consecutively one through seven. In each row a different one of seven trees— Q, R, S, T, U, V, W—is to be grown according to the following conditions:

Neither Q nor R can be in a row next to the row W is in.
T must be grown in either row one or row seven.
S must be grown in a row next to a row containing either U or W, or in a row that is the only row between the rows containing U and W.
If V is next to only one other row of trees, that row must contain R.

15. If W is next to T, and V is in the seventh row, in which row must W be planted?

(A) 2 (B) 3 (C) 4 (D) 5 (E) 6

16. Which of the following is a possible order for the trees in the garden plot, beginning with row one?

(A) S Q R U W V T
(B) T W Q S U R V
(C) T U S W V Q R
(D) T U S W Q R V
(E) U W S Q T V R

17. If V is in the first row and Q is in the sixth row, which tree must be in the, fourth row?

(A) R (B) S (C) T (D) U (E) W

18. If Q, R, S, U, and W are in the inner five rows, which of the following is a possible ordering of these trees in the five rows?

(A) Q R W S U
(B) Q U S W R
(C) R S Q U W
(D) R U W S Q
(E) S Q R U W

Test No 16

Question No 1 - 5

A doctor has prescribed a meal program for a patient. Choosing from meals F, G, H, I, J, K, L, and M, the patient must take a routine of exactly five different meals each day. In any day routine, except the first, exactly three of the meals must be ones that were included in the routine done on the previous day, and any permissible routine must also satisfy the following conditions:

If F is in a routine, L cannot be done in that routine.

If G is in a routine, J must be one of the meals done after G in that routine.

If H is in a routine, L must be one of the meals done after H in that routine.

The fifth meal of any routine must be either I or K.

1. Which of the following could be the routine for the first day of the program?

(A) F, H, L, I, K
(B) G, I, H, L, K
(C) J, K.'H, L, I
(D) K, G, I, J, M
(C) L, G, H, J. I

2. If one day's routine is F, G, M, J, K, each of the following could be the next day's routine EXCEPT

(A) G, H, L, J, K
(B) G, J, L, M, I
(C) M, H, L, J. K
(D) M, J. K, L, I
(E) M, J, I, F. K

3. Which of the following is true of any permissible routine?

(A) F cannot be done third.
(B) G cannot be done third.
(C) J cannot be done third.
(D) H cannot be done fourth.
(E) K cannot be done fourth.

4. If the patient chooses H and M for the first day's routine, which of the following could be the other three meals chosen?

(A) F, J, K
(B) G, I. L
(C) G, J, L
(D) J, I, K
(E) J, I, L

5. If H is the third meal in a routine, which of the following CANNOT be the second meal in that routine?

(A) G (B) I (C) J (D) K (E) M

Question No 6 - 11

A university has decided to appoint a four-member commission to review educational policy. Eight members are eligible to serve on the commission: R, S, T, U, V, W, X, and Y. Three of these eight—S, V, and W—are student, whereas the remaining five are teacher. University policy and the personalities of the eight people in question dictate that the choice of commission members meet the following conditions:

The commission must be composed of exactly two teacher members and exactly two student members.
S and T cannot serve together.
If Y is on the commission, then neither W nor X can be on the commission.
If U is on the commission, then T must be on the commission.
If both R and T are on the commission, then V cannot be on the commission.

6. If Y is on the commission, the other three members of the commission must be

(A) R, S, and V
(B) R, S, and W
(C) S, T, and V
(D) S, U, and V
(E) T, U, and V

7. If T is on the commission, which of the following is one of the faculty members who must also be on the commission?

(A) R (B) U (C) V (D) X (E) Y

8. If S is on the commission, any of the following could be on the commission EXCEPT

(A) U (B) V (C) W (D)O (E) Y

9. If neither R nor Y is on the commission, which of the following could be a list of the commission members?

(A) S, T, V, and X
(B) S, U, W, and X
(C) S, V, X, and W
(D) T, U, V, and X
(E) T, V, W, and X

10. If V is not on the commission, which of the follow ing is a list of people all of whom must be on the commission?

(A) R, S, and W
(B) R, T, and W
(C) S, U, and W
(D) T, U, and W
(E) T, W, and Y

11. V and W do not both serve on the commission, which of the following is a list of people all of whom could be on the commission together?

(A) R, S, and V
(B) R, T, and W
(C) R, W, and Y
(D) S, U, and W
(E) U, V, and Y

Question No 12 - 15

I, J, and K are Banks, and L, M, N, and O are employees. Each employee job at least one Bank.
L always works for I and at least one of the other Banks.
Some of the time J employs only one of these employees; the rest of the time it employs exactly two of them.
I and K each employ exactly two of these employees all the time.

12. If M jobs at K only, and if N jobs at J and K only, O jobs at

(A) I only
(B) J only
(C) K only'
(D) both I and J
(E) both I and K

13. If L and M both job at the same two Banks, O must jobs at

(A) both I and J
(B) both I and K
(C) either I or J but not both
(D) either I or K but not both
(J) either J or K but not both

14. Whenever only N jobs at J, which of the following must be true?

(A) M jobs at either I or J but not both.
(B) O jobs at either J or K but not both.
(C) L and M cannot jobs at the same Bank.
(D) L and O cannot jobs at the same Bank.
(E) M and O cannot jobs at the same company.

15. Whenever J employs only one employee, which of the following must be true?

I. M jobs at two Banks.
II. O jobs at J.
III. N jobs at only one Bank.

(A) I only
(B) II only
(C) III only
(D) I and II only
(E) II and III only

Question No 16 - 19

A store owner is setting up several mouse boxes, each to contain accurately six mouse so chosen from varieties M,' N, O, P, Q, R, and S that none of the mouse in any given box will fight. Mouse of any of the varieties above can be placed in a box together except for the following restrictions:

Mouse of varieties M will fight with mouse of varieties O, Q, and R.
Mouse of varieties P will fight with mouse of varieties N and R.
If three or more mouse of varieties P are in one box, they will fight with each other.
Mouse of varieties Q will fight with mouse of varieties S.
If a mouse of varieties N is to be in a box, at least one mouse of varieties R must also be in the box.

16. If a box is to contain mouse of exactly three different varieties, these varieties could be
(A) M, N, and P (B) M. P, and R (C) N, O, and P
(D) O, P, and Q (E) P, Q, and S

17. If there are to be exactly two varieties represented in a box, and three mouse of varieties Q are to be in the box, the other three mouse in that box could be from which of the following varieties?

(A) M (B) N (C) O (D) P (E) S

18. If a box is to contain mouse of exactly four different varieties, it CANNOT contain mouse of varieties

(A) M (B) N (C) O (D) Q (E) S

19. Mouse of which of the following varieties could be put into a box with mouse of varieties N?

(A) M and P (B) M and Q (C) O and P (D) O and R (E) P and R

Test No 17

Question No 1 - 5

Ten persons will sit around a table. The ten persons will be seated in two rows of five chairs that face each other along the two long sides of the rectangular table. The chairs are numbered consecutively from 1 to 10 with chairs 1 through 5 on one side of the table and chairs 6 through 10 on the other side, with chair 6 opposite chair 5. Five of the ten persons are men— F, G, H, J, and L—and five of the persons are women—M, R. S, T, and Y! The seating is governed by the following rules:

On each long side of the table, no more than two consecutive chairs can be occupied by men.

T cannot sit beside H.

F cannot sit beside G.

M must sit beside R.

H must sit beside J.

1. Which of the following can be the arrangement of people in chairs 1 through 5 ?

	Chair 1	Chair 2	Chair 3	Chair 4	Chair 5
(A)	F	H	J	M	R
(B)	F	G	M	T	L
(C)	L	M	R	J	H
(D)	M	G	R	Y	L
(E)	S	F	T	H	J

2. If J is in chair 7, H is in chair 8, and F is in chair 10, which of the following can be in chair 9?

(A) L
(B) M
(C) R
(D) T
(E) Y

3. If G, Y, and J are in chairs I through 3, respectively, which of the following must be in chair 5?

(A) F
(B) L
(C) R
(D) S
(E) T

4. If T, S, F, L, and Y are in chairs 1 through 5, respectively, then G must be either in chair

(A) 6 or in chair 8
(B) 6 or in chair 10
(C) 7 or in chair 10
(D) 8 or in chair 9
(E) 8 or in chair 10

5. If as many women as possible are seated on the side that has chairs numbered 1 through 5, which of the following statements must be true?

(A) Chair 3 is occupied by a man.
(B) Chair 8 is occupied by a woman.
(C) Chairs 1 and 2 are each occupied by a woman.
(D) Chairs 4 and 5 are each occupied by a woman.
(E) Chairs 5 and 6 are each occupied by a woman.

Question No 6 - 11

The organizers of a speech tournament will give an awards banquet after the final round of debates for the two teams in that round: for the Model School, composed of Instructor M and speakers N, O, and P, and for the Oxford School, composed of Instructor Q and speakers R, S, and U. At the winners' table exactly seven places will be set, all along one side of the table and consecutively numbered one through seven. The assignment of sitting to these seven positions will be determined by the team scores from the final round of debates and must meet the following conditions:

All the speakers will be seated.
If one team wins, the Instructor of the winning team will sit in the first position and a speaker from that team will sit in the fourth position.
In case of a tie, neither Instructor will sit at the winners table, and Judge Z will sit in the fourth position.
No two speakers from the same team can sit next to each other.
N and U will not sit next to each other.

6. Which of the following could be an acceptable assignment for chairs one through four, respectively

	One	Two	Three	Four
(A)	N	Q	P	U
(B)	M	N	U	P
(C)	Q	N	S	R
(D)	Q	U	O	S
(E)	S	U	P	R

7. If O and U sit, respectively, in the second and seventh positions, which of the following must sit in the first position?
(A) M (B) N (C) P (D)Q (E) R

8. If U and P are, respectively, in the first and seventh positions, which of the following must sit in the fifth position?
(A) N (B) O (C) Q (D) R (E) S

9. If the Model School and the Oxford School tie, which of the following could be an acceptable assignment for positions three through six, respectively?

	Three	Four	Five	Six
(A)	N	Z	O	U
(B)	O	U	R	N
(C)	S	Z	N	U
(D)	S	Z	U	O
(E)	U	Z	N	S

10. If Q and N sit in the first and third positions, respectively, which of the following can sit in the fourth position?
(A) O (B) P (C) Z (D) S (E) U

11. If N, S, and P sit, respectively, in the third, fifth, and sixth positions, which of the following must sit in the seventh position?
(A) M (B) O (C) Q (D) R (E) U

Question No 12 - 15

Chairs on a small plane are being assigned to six persons—F, G, H, I, J, and K. The eight chairs on the plane are in four rows, numbered 1 through 4, and each row has two seats. Chair assignments are made according to the following conditions:

F must sit alone in a row. G must sit in the same row as I.

H cannot sit in the same row as J.

The rows with only one person must be row 1 and row 3.

12. Which of the following persons could be assigned to sit in the same row as H ?

(A) F
(B) G
(C) I
(D) J
(E) K

13. If G and I are in row 2, which of the following must be true?

(A) F is in row 1.
(B) H is in row 1.
(C) H is in row 4.
(D) J is in row 3.
(E) K is in row 4.

14. Which of the following is the total number of persons eligible to be the person assigned to sit in the same row as K?

(A) 1
(B) 2
(C) 3
(D)4
(E) 5

15. If H and K are assigned to sit together in a row, which of the following persons could be assigned to sit in row 3?

(A) G
(B) H
(C) I
(D) J
(E) K

Question No 16 - 19

A variety show producer is interviewing five entertainers in five consecutive interviews. Each entertainer interviews alone, and only once. The five entertainers are: two singers (a tenor and a soprano), a dancer, a juggler, and a actor. The interviews must be scheduled according to the following conditions:

The two singers cannot interview one after the other.

The juggler must interview immediately before a singer.

The actor must interview immediately before or immediately after the dancer.

16. If the actor interviews first, which of the following must be true?

(A) The soprano interviews third.
(B) The juggler interviews fourth.
(C) The tenor interviews fifth.
(D) The soprano interviews sometime earlier than the dancer.
(E) The dancer interviews immediately before the tenor.

17. If the tenor interviews first and the soprano interviews fifth, which of the following must be true?

(A) The actor interviews sometime after the juggler.
(B) The actor interviews immediately after the dancer.
(C) The juggler interviews sometime after the dancer.
(D) The juggler interviews sometime before the actor.
(E) The dancer interviews immediately before the juggler.

18. If the actor, the soprano, and the juggler interview one after the other, in that order, which of the following must be true?

(A) The actor is the first of the five to interview.
(B) The soprano is the second of the five to interview.
(C) The juggler is the third of the five to interview.
(D) The dancer is the fourth of the five to interview.
(E) The tenor is the fifth of the five to interview.

19. If the juggler interviews sometime earlier than the dancer, a singer CANNOT interview in which of the following positions?

(A) First
(B) Second
(C) Third
(D) Fourth
(E) Fifth

Test No 18

Question No 1 - 5

Six duty workers—Ali, Bilal, Ghulam, Jamal, Muneer, and Tanveer—are planning to perform a duty program consisting entirely of three shifts. Each shift requires two fire men, one gas expert, and a driver. Each worker must perform duty of in at least one shift, and each worker can perform duty of, at most, one role in a shift. No worker can perform duty of the same type of role (fire man, gas expert, or driver) in two successive shifts.

Ali can perform duty of fire man only, and must perform duty of in the first shift.
Bilal can perform duty of fire man or driver.
Ghulam can perform duty of fire man or gas expert.
Jamal can perform duty of gas expert only.
Muneer can perform duty of fire man or driver.
Tanveer can perform duty of driver only.

1. Any of the following duty workers could perform duty of in the second shift EXCEPT
   (A) Ali
   (B) Bilal
   (C) Ghulam
   (D) Jamal
   (E) Tanveer

2. If Ghulam can perform duty of gas expert in the first shift, which of the following must be true?
   (A) Bilal can perform duty of driver in the first shift.
   (B) Ghulam can perform duty of gas expert in the second shift.
   (C) Ghulam can perform duty of gas expert in the third shift.
   (D) Jamal can perform duty of gas expert in the second shift,
   (E) Tanveer can perform duty of driver in the first shift.

3. If Ali, Bilal, Ghulam, and Jamal perform duty of in the first shift, which of the following could be the group of duty workers playing in the second shift?
   (A) Ali, Bilal, Ghulam, and Muneer
   (B) Ali, Ghulam, Muneer, and Tanveer
   (C) Bilal, Ghulam, Jamal, and Muneer
   (D) Bilal, Ghulam, Muneer, and Tanveer
   (E) Bilal, Jamal, Muneer, and Tanveer

4. Which of the following groups of duty workers includes all those, and only those, who CANNOT be scheduled to perform duty of in all three shifts, no matter what schedule is devised?
   (A) Ali, Bilal, and Ghulam
   (B) Ali, Jamal, and Tanveer
   (C) Bilal, Ghulam, and Muneer
   (D) Bilal, Jamal, and Muneer
   (E) Ghulam, Jamal, and Tanveer

5. Unavailability of which of the following duty workers would still permit scheduling the five remaining players so that the proposed program could be performed?
   (A) Bilal
   (B) Ghulam
   (C) Jamal
   (D) Muneer
   (E) Tanveer

Question No 6 - 10

A wild-animal hospital has its cages in a single row. Animals are homed one to a cage. To avoid disturbing the animals, the hospital does not home an animal of-a predator varieties in a cage next to that of an animal of a varieties on which it attacks. The animals the hospital can accept are of varieties G, H, I , J, and K, which among them have only the following predator-prey relationships:

G attacks on H.

K attacks on H.

G attacks on I.

I attacks on J.

6. If the hospital has one animal of each of the five varieties, which of the following, in order, is an acceptable placement of the animals in consecutive cages?

(A) G, I, H, J, K
(B) G, J, K, I, H .
(C) G, K, J, I, H
(D) I, H, K, J, G
(E) I, K, J, G, H

7. If four animals, one each of varieties G, H, I, and K, are to be placed in four consecutive cages, not necessarily in the order given, which of the following must be true?

(A) The G and the H are each placed in an end cage of the four cages.
(B) The G and the I are each placed in an end cage of the four cages.
(C) The G and the K are not placed in cages adjacent to each other.
(D) The H and the I are not placed in cages adjacent to each other.
(E) The I and the K are not placed in cages adjacent to each other.

8. If four animals, one each of varieties G, H, I, and J, are to be placed in four consecutive cages, not necessarily in the order given, the J must be placed next to

(A) the G and in an end cage of the four cages
(B) the I and in an end cage of the four cages
(C) the H and in an inner cage of the four cages
(D) both the G and the I
(E) either the G or the H, but not both

9. If four animals, one each of varieties G. I, J, and K, are to be placed in four consecutive cages, not necessarily in the order given, which of the following can be true?

(A) The I is in a cage adjacent to the cage of the G.
(B) The I and the K are in end cages of the four cages.
(C) The J and the K are in end cages of the four cages.
(D) The G and the K are in inner cages of the four cages.
(E) The I and the K are in inner cages of the four cages.

10. If the hospital has one animal of each varieties, and if they are to be placed in five consecutive cages with the J in the middle cage, which of the following must be true?

(A) The G is placed in an end cage of the five cages.
(B) The H is placed in an end cage of the five cages.
(C) The G is placed in a cage adjacent to the J's cage.
(D) The I is placed in a cage adjacent to the H's cage.
(E) The I is placed in a cage adjacent to the K's cage.

Question No 11 - 14

Six cloth washmen— Ali, Babar, Farhan, Dawood, Galib, and Hamid — are arranging a cloth washing schedule for the six days of their camping trip so that each of them will wash cloth on only one day.

Babar washes either on day 2 or on day 6.
If Ali washes on day 1, Farhan washes on day 4; Farhan does not wash on day 4 unless Ali washes on day 1.
If Ali washes on day 1, Hamid washes on day 5; Hamid does not wash on day 5 unless Ali washes on day 1.
If Galib does not wash on day 3, Ali washes on day 3.
If Ali washes on day 4, Dawood. washes on day 5.
If Babar washes on day 2, Galib washes on day 5.
If Hamid washes on day 6, Dawood washes on day 4.

11. Which of the following is an acceptable order in which the cloth washmen can wash cloths from the first to the last day?
(A) Dawood, Babar, Ali, Galib, Farhan, Hamid
(B) Babar, Ali, Hamid, Farhan, Galib, Dawood
(C) Hamid, Galib, Babar, Farhan, Dawood, Ali
(D) Farhan, Babar, Ali, Dawood, Galib, Hamid
(E) Ali, Babar, Dawood, Farhan, Galib, Hamid

12. If Dawood washes on day 6 on which day does Farhan wash?
(A) 1 (B) 2 (C) 3 (D) 4 (E) 6

13. If Ali washes on day 1, who washes on day 2?
(A) Babar
(B) Farhan
(C) Dawood
(D) Galib
(E) Hamid

14. If Babar washes on day 2, which of the following is a complete and accurate list of the days that could be the day on which Hamid washes?
(A) 1
(B) 4
(C) 1,4
(D) 4,6
(E) 1,4,6

Question No 15 - 18

On a cost sheet, a manager is filling in numbers on eleven lines— J, N, O, P, S., T, U, W, X, V, and Z— according to the following instructions and no others:

Line J must be derived from lines N, O, and V as N plus O minus V.
Line T. must be derived from lines P and S. as P plus S.
Line W must be derived from lines T and U as T minus U.
Line X must be derived from lines W and J is W minus J.
Line V must be derived from fine T as five percent of T
Line Z must be derived from line X as half of X.

15. V cannot be derived unless which of the following is known?

(A) J
(B) N
(C)O
(D) P
(E) U

16. J cannot be derived unless which of the following is known?

(A) S
(B) U
(C) W
(D) X
(E) Z

17. It is necessary for the manager to know O before the manager can derive

(A) T
(B) U
(C) W
(D) X
(E) V

18. If the manager knows P, O, S, and U but not N. which of the following is a pair of lines that the manager can derive?

(A) J and V .
(B) T and W
(C) T and X
(D) X and V
(E) X and Z

Test No 19

Question No 1 - 5

A map representing cities F, G, H, I, J, and K. is to be drawn. Neighboring cities cannot be the same color on the map.

The only cities neighboring to each other are as follows:

F, G, I and J are each neighboring to H.
I is neighboring to J.
F and G are each neighboring to K.

1. Which of the following is a pair of cities that must be different in color from each other?

(A) F and I (B) G and I (C) G and K
(D)I and K (E) J and K

2. If I is the same color as K, then it must be true that

(A) F is the same color as J
(B) G is the same color as I
(C) I is the same color as J
(D) G is a different color from any other city
(E) H is a different color from any other city

3. Which of the following is a pair of cities that can be the same color as each other?

(A) F and G (B) G and H (C) H and I
(D)H and J (E) I and J

4. Which of the following cities can be the same color as H?

(A) F
(B)G
(C) I
(D) J
(E) K

5. If the fewest possible colors are Used and one of the cities is the only one of a certain color that city could be

(A) H, but not any of the other cities
(B) K, but not any of the other cities
(C) F or G, but not any of the other cities
(D) H or I or J, but not any of the other cities
(E) H or J or K, but not any of the other cities

Question No 6 - 11

A project consists of eight tasks—N, Q, R, T, U, V, W, and Y—that all must be performed. Three days are allotted for the project. Each task requires exactly one evening or else one night to be performed, and at most two tasks can be performed during any given evening or night. The following restrictions must be observed:

Q must be performed on the second day.
W must be performed in the evening;
R and U must be performed at the-same time as each other.
Q must be performed at some time after U has been completed and at some time after V has been completed.
V must be completed at some time before W is performed and at some time before Y is performed.

6. Which of the following can be the schedule for the tasks of the project?

		Day One	Day Two	Day Three
(A)	Evening	R, U	Q, W	
	Afternoon	N, T	V, Y	
(B)	Evening	R, U	N	W
	Afternoon	V	T	Q, Y
(C)	Evening	R, U	Q	N, Y
	Afternoon	V	W	T
(D)	Evening	U	R, V	W
	Afternoon	T	Q	N, Y
(E)	Evening	V	R, U	N, W
	Afternoon	T	Q	Y

7. Which of the following must be completed at some time before Q is performed?

(A) N (B) R (C) T (D) W (E) Y

8. At the earliest, W can be performed during which of the following time periods?

(A) The evening of the first day
(B) The night of the first day
(C) The evening of the second day
(D) The night of the second day
(E) The evening of the third day

9. If Q is performed in the evening, which of the following must be performed on the first day?

(A) N (B) R (C) T (D) W (E) Y

10. If N and T are both performed on the first day, which of the following must be performed on the third day?

(A) R (B) U (C) V (D) W (E) Y

11. If the project is to be completed by the end of the second day, which of the following must be performed on the second day?

(A) N (B) R (C) T (D)V (E)Y

Question No 12 - 15

The mixing vat in a factory receives liquid ingredients through 6 separate boxes—labeled L, M, N, O, P, and Q—each of which has exactly two settings: green and blue. The mixing-vat operator must ensure that each box is set green or blue according to the following conditions:

If N is green, both M and Q must be blue.

L and Q cannot both be blue at the same time.

If P is blue, Q must also be blue.

M and O cannot both be green at the same time.

12. If Q is green, which of the following must be true?

(A) L is green.

(B) M is green.

(C) N is green.

(D) O is green.

(E) P is green.

13. If L is blue and O is green which of the following must be true?

(A) M is green.
(B) N is green.
(C) N is blue.
(D) P is blue.
(E) Q is blue.

14. If the maximum numbers of boxes that can be blue at the same time are blue, which of the following must be true?

(A) L is green.
(B) M is green.
(C) N is green.
(D) Q is green.
(E) All boxes are blue.

15. Which of the following, if given to the mixing-vat operator as an instruction, would NOT determine the setting of any other box?

(A) M must be green

(B) N must be green

(C) O must be green

(D) M must be blue

(E) P must be blue

Question No 16 - 19

A set designer will select colors for six sets that will be used for six consecutive pictures of a ballet, with each picture having a single set. The artistic director has selected eight paint colors—green, magenta, orange, purple, brown, red, white, and yellow—and has asked the designer to use those colors according to the following specifications:

No color can be chosen for more than one set.

Sets in pictures 1 and 4 will be painted partly one color and partly another color; sets in the other four pictures will each be painted a single color.

If green is chosen for the set in any picture, brown must also be chosen for the set in that picture.

Purple and orange are never used in the same picture as each other.

Red is chosen for the set. in the picture immediately following the picture for which white is chosen, and neither of these colors is used in the same picture as any other color.

16. If yellow is chosen for picture 2 and brown is one of the colors chosen for picture 4, which of the following must be one of the colors chosen for ballet 1?

(A) Green
(B) Magenta
(C) Orange
(D) Purple
(E) White.

17. If orange is chosen for picture 5, which of the following must be true?

(A) Green is chosen for picture 1.
(B) Magenta is chosen for picture 4.
(C) Purple is chosen for picture 2.
(D) Red is chosen for picture 3.
(E) Yellow is chosen for picture 4.

18. If white is chosen for picture 5, which of the following can be true?

(A) Green is chosen for picture 2.
(B) Magenta is chosen for picture 6.
(C) Purple is chosen for picture 6.
(D) Magenta is chosen for picture 2, and yellow is chosen for picture 3.
(E) Orange is chosen for picture 2, and yellow is chosen for picture 3.

19. For picture 2, the designer can select a color from a-maximum of how many acceptable colors?

(A) One
(B) Two
(C) Three
(D) Four
(E) Five

Test No 20

Question No 1 - 5

A company president wishes to select four members of a marketing-finance committee as representatives to meet with the company's board of trustees. The marketing-finance committee consists of exactly four marketing members— J, K, L, and M—and four finances—W, X, Y, and Z. The president can select any of the committee members as representatives as long as he observes the following restrictions:

The group of four representatives must consist of exactly two marketing members and two finances.
Either J or K must be one of the representatives, but J and K cannot both be representatives.
If W is a representative, L must also be a representative.
If Y is a representative, K cannot be a representative.

1. If W is a representative, which of the following CANNOT also be a representative?

(A) L (B) M (C) X (D) Y (E) Z

2. If neither X nor Z is a representative, which of the following is the pair of marketing members who must be representatives?

(A) J and K
(B) J and L
(C) J and M
(D) K and L
(E) K and M

3. If K is representative, which of the following can be the other three representatives?

(A)	J	X	Z
(B)	L	M	W
(C)	L	W	X
(D)	L	X	Y
(E)	M	W	Z

4. If K, M, and X are representatives, which of the following must also be a representative?

(A) J
(B) L
(C) W
(D) Y
(E) Z

5. If Y is a representative and L is not a representative, the group of representatives would be completely determined if it were also true that

(A) J is a representative
(B) M is a representative
(C) K is not a representative
(D) W is not a representative
(E) Z is not a representative

Question No 6 – 11

In order to solve a robbery that has taken place at the Mehmood's factory, Inspector Rehan has been instructed to search exactly seven locations—F, K, L, G, H, M and N. Locations F, K, and L are located ground floor, whereas locations G, H, M, and N are located first floor. During the first visit to search for evidence, Inspector Rehan has time to search exactly three locations. This search must be conducted according to the following conditions:

The three locations searched must be neither all first floor nor all ground floor.
If the H is searched, then the F must also be searched.
If the M is not searched, then the G cannot be searched.
K and the L cannot both be searched.
The three locations searched must include the L or the N, or both.

6. Which of the following is a selection of locations that conforms to the conditions for Inspector Rehan first visit?

(A) F, G, H
(B) F, H, L
(C) F, K, L
(D) G, H, K
(E) G, M, N

7. During the first visit, if the K is searched, which of the following must also be searched?

(A) F (B) G (C) H (D) M (E) N

8. During the first visit, if the M is searched, which of the following is a pair of locations that can both also be searched?

(A) F and H
(B) G and K
(C) H and L
(D) K and L
(E) K and N

9. During the first visit, if the G is searched, which of the following must also be searched?

(A) F (B) H (C) K (D) L (E) N

10. During the first visit, if the K is the only down stairs location searched, which of the following must also be searched?

(A) M and N
(B) H and N
(C) H and M
(D) G and N
(E) G and M

11. During the first visit, if the L is <u>not</u> searched, which of the following is a pair of locations that can both be searched?

(A) F and G
(B) H and K
(C) F and M
(D) H and M
(E) G and K

Question No 12 - 14

Seven rooms in a building are to be painted. The rooms, which are on one side of a hallway, are numbered consecutively, one to seven, from the front of the building to the back. Each room is to be painted one color only according to the following conditions:

Two rooms must be painted pink; two rooms must be painted brown; two rooms must be painted gold; and one room must be painted silver.
The two rooms painted gold must be next to each other.
The two rooms painted brown cannot be next to each other.
The room painted silver cannot be next to an room painted pink.
Room 3 must be painted pink.

12. If room 2 is painted gold, which of the following rooms must also be painted gold?

(A) 1
(B) 3
(C) 4
(D) 5
(E) 6

13. If room 5 is painted pink, which of the following could be true?

(A) Room 1 is painted brown.
(B) Room 2 is painted silver.
(C) Room 4 .is painted gold.
(D) Room 4 is painted silver.
(E) Room 6 is painted silver.

14. If room 4 is painted pink and a room that is painted gold is next to a room that is painted pink, which of the following must be true?

(A) Room 1 is painted gold.
(B) Room I is painted silver.
(C) Room 5 is painted brown.
(D) Room 6 is painted silver.
(E) Room 7 is painted brown.

Question No 15 - 18

A letter carrier must deliver letter by making a stop at each of six buildings: T, U, V, W, X, and Y. Letter to be delivered is of two types, normal letter and special letter. The delivery of both types of letter is subject to the following conditions:

Regardless of the type of letter to be delivered, letter to X, and letter to Y must be delivered before letter to V is delivered.
Regardless of the type of letter to be delivered, letter to U and letter to T. must be delivered before letter to Y is delivered.
Letter to buildings receiving some special letter must be delivered, as far as the above conditions permit; before letter to buildings receiving only normal letter.

15. If T is the only building receiving special letter, which of the following lists the buildings in an order, from first through sixth, in which they can receive their letter?

(A)' U, T, X, Y, W, V
(B) U, T, Y, X, V, W
(C) T, U, X, V, Y, W
(D) T, X, U, Y, W, V
(E) W, T, U, X, Y, V

16. If U, V, and Y are each receiving special letter which of the following lists the buildings in an order, from first to sixth, in which they must receive their letter?

(A) T, U, X, Y, W, V
(B) U, T, W, X, Y, V
(C) U, T, Y, X, V, W
(D) V, U, Y, X, T, W
(E) Y, U, V, X, T, W

17. If the sequence of buildings to which letter is delivered is W, X, U, T, Y, V and if Y is receiving special letter, which of the following is a complete and accurate list of buildings that must also be receiving special letter?

(A) W, U
(B) W, X
(C) X, U
(D) X, V
(E) W, X, U, T

18. If only one building is to receive special letter, and, as a result, W can be no earlier than fourth in the order of buildings, which of the following must be the building receiving special letter that day?

(A) T
(B) U
(C) V
(D) X
(E) Y

Test No 21

Question No 1 - 5

A network system has exactly four message exchanges computers: R, S, T, and U. Messages travel from one computer directly to another computer only as follows:

From R to S, but not vice versa

From R to T, but not vice versa

From R to U, and vice versa

From S to T, and vice versa

From S to U, but not vice versa

From U to T, but not vice versa

A single direct path going in one direction from one computer to another is called a leg.

1. If a message is to travel from T to S over as few legs as possible, it must travel in which of the following ways?

(A) Directly from T to S
(B) Via R but no other computer
(C) Via U but no other computer
(D) Via R and U, in that order
(E) Via U and R, in that order

2. Which of the following is a complete and accurate list of computers to which a message can be sent along exactly one leg from U?

(A) R
(B) T
(C) R, T
(D)S, T
(E) R, S, T

3. Which of the following sequences of legs is a path over which a message could travel from S back to S ?

(A) From S to R, from R to S
(B) From S to T, from T to R, from R to U, from U to S
(C) From S to T, from T to U, from U to R, from R to S
(D) From S to U, from U to R, from R to T, from T to S
(E) From S to U. from U to T, from Y to R, from R to S

4. If all of the legs in the system are equal in length, and if messages always travel along the shortest possible path, then the longest path any message travels in the system is the path from

(A) S to R
(B) T to R
(C) T to U
(D) U to R
(E) U to S

5. If certain restricted messages cannot travel any further than one leg, and if an addition of one leg is to be made to the system so that such restricted messages can be sent from each computer to at least two others and also be received by each computer from at least two others, then that addition must be from

(A)S to R
(B)T to R
(C)T to U
(D)U to R
(E) U to S

Question No 6 - 11

A camp counselor is organizing a game among nine adults. Three of the adults—I, L, and N—are females; the other six adults—Q, R, T, U, V, and W—are males. Two teams—group 1 and group 2—will be organized. Group 1 will have four adults; group 2 will have five adults. In assigning adults to teams, the counselor observes the following restrictions:

Group 1 must have exactly two of the female adults.
R must be on the same group as U.
I and Q cannot be on either of the teams together.
T and V cannot be on either of the teams together.
If R is on the same group as V, then N must be on the group that does not include R and V.

6. Which of the following is a possible assignment of adults to the two teams?

	Group 1	Group 2
(A)	I, L, R, U	N, Q, T, V, W
(B)	I. L, T, W	N, Q, R, U, V
(C)	I, N, Q, T	L, R, U, V, W
(D)	I, N, T. W	L, Q, R, U, V
(E)	I, R, V, W	L, N, Q, T, U

7. If W and U are on group 2, the adults assigned to group 1 could be

(A) I, N, R, T
(B) L, N, Q, R
(C) L, N, Q, V
(D) L, N, R, T
(E) L, Q, T, V

8. If N and R are on group 2, which of the following is a pair of adults who must be on group 1?

(A) I and T
(B) I and U
(C) I and V
(D) Q and V
(E) T and W

9. If I, T, and W are on group 1, which of the following must be true?

(A) L is on group.2.
(B) N is on group 2.
(C) R is on group 1.
(D) U is on group 1.
(E) V is on group 1.

10. If L is on the same group as N, which of the following must be true?

(A) L is on the same group as Q .
(B) T is on the same group as W .
(C) V is on the same group as W .
(D) I is not on the same group as T
(E) Q is not on the same group as V.

11. Each of the following is a pair of adults who can be on group 1 together EXCEPT

(A) I and T (B) L and N (C) N and V
(D) Q and R (E) Q and T

Question No12 - 15

A group of three detectives must be selected from six detectives—F, G, H, I, J, and M— according to the following conditions:

Either F or H, or both, must be selected
Either G or J must be selected, but neither J nor H can be selected with G

12. Which of the following is an acceptable selection of detectives?

(A) F, G and H
(B) F, H and I
(C) F, H and J
(D) G, H and J
(E) G, I and J

13. Which of the following pairs of detectives CANNOT both be among the detectives selected?

(A) F and G
(B) F and I
(C) G and M
(D) I and M
(E) J and M

14. If H is selected, which if the following must also be among the detectives selected?

(A) F
(B) G
(C) I
(D) J
(E) M

15. If J is not selected, which pair of detectives must be among those selected?

(A) F and G
(B) F and I
(C) F and M
(D) G and I
(E) G and M

Question No 16 - 19

A driver clear all six post points—S, T, U, W, X, Y —one at a time. The sequence in which the clearing is done must conform to the following specific rules:

Point Y must be cleared sometime before point S and also sometime before point X.
Point T must be cleared sometime after point S and also sometime after point W.
Point U cannot be cleared immediately before or immediately after point W.
A point that is about to receive posts must, when it is consistent with the rules above, be cleared before a point that is not.

16. If U and X alone are about to receive posts, the points can be cleared in which of the following sequences?

(A) Y, X, S. U. T, W
(B) U, X. Y. W. S. T
(C) Y. U, S, X. W. T
(D) U. Y, X. W. S, T
(E) Y, X. S. W, T, U

17. If T and X alone are about to receive posts, which of the following must be true?

(A) X is cleared first.
(B) Y is cleared second.
(C) W is cleared third.
(D) S is cleared fourth.
(E) U is cleared sixth.

18. If T and W alone are about to receive posts, then the points can be cleared in which of the following sequences?

(A) Y, W, S, T, U, X
(B) Y. W, T, X, S. U
(C) W, T, Y, U, S, X
(D) W, Y, S, X, T, U
(E) W. Y, S, T, X, U

19. If W alone is about to receive posts, the points can be cleared in which of the following sequences?

(A) W, S, U, T, Y, X
(B) W. U, T. Y, S. X
(C) W. Y. X, S. U. T
(D) Y. S, X. W. U, T
(E) Y. W, T. S. X, U

Test No 22

Question No 1 - 5

Six students—F, G, H, I, J, and K—are to be seated at a round table for group study. There are exactly six seats around the table. Each student sits facing the center of the table and is directly opposite a student across the table. The seating arrangement is subject to the following restrictions:

K cannot sit next to H.

J cannot sit next to F.

I must sit next to F.

1. If I sit next to J on J's right side, who must sit next to I on I's right side?

(A) F (B) G (C) H (D) J (E) K

2. Which of the following is an acceptable sequence of students around the table?

(A) F, J, I, K, H, G
(B) F, J, K, H, I, G
(C) K, G, H, J, F, I
(D) K, I, F, H, J, G
(E) K, J, I, F, G, H

3. If F sits next to H, which of the following is a complete and accurate list of those who can sit next to H on H's other side?

(A) G
(B) G, J
(C) G, J, I
(D) I, J, K
(E) G, I, J, K

4. If K sits next to F and J sits next to I, which of the other students must sit next to J?

(A) F (B) G (C) H (D) I (E) K

5. If K sits directly across the table from G, who must sit on either side of H?

(A) F and G
(B) F and J
(C) G and I
(D) G and J
(E) I and K

Question No 6 - 11

In a province, there are eight cities which are connected through path for trade purpose.

Paths of city O are directly without going through any of the other cities to each of the cities F, G, J, and R; from R directly to each of the cities S and T; from J directly to the city M; and from -M directly to T. The paths, which go to the center of each city, neither merge into nor cross each other.

Trade would have passed in both directions along any of the trading paths.

No further paths used during that period have yet been found.

A shortest route between cities is one that goes through cities that are intermediate on the route the fewest times overall.

6. On the network of paths, a trader could have traveled between the cities in which of the following pairs by going through exactly one other city?
   (A) F and M
   (B) F and T
   (C) G and T
   (D) M and S
   (E) R and M

7. A trader must have gone through O to travel on the network of discovered paths from

   (A) F to G (B) J to T (C) M to S (D) R to T (E) S to T

8. A trader going on the network of paths from J to all of the cities F, G, and T, not necessarily in that order, by a shortest route could have gone through which of the following exactly twice?
   (A) F (B) M (C) O (D) R (E) T

9. To make a trip on the network of discovered from S to both F and M, not necessarily in that order, without going through any intermediate city twice, a trader must have gone from
   (A) F to O
   (B) G to O
   (C) J to M
   (D) O to J
   (E) T to M

10. To travel on the network of paths from R to all of the cities J, F. and S, not necessarily in that order, by a route that is shortest overall, a trader could have gone first to
    (A) O and last to F
    (B) O and last to J
    (C) O and last to S
    (D) S and last to F
    (E) T and last to S

11. If the archaeologist discovers that during an earlier period the path from O to J did not yet exist, but exactly one additional path, from G to T, existed along with the other paths in the network, then during that earlier period a trader making which of the following trips by a shortest route could have passed through G?
    (A) From F to J
    (B) From F to S
    (C) From J to S
    (D) From R to M
    (E) From T to J

Question No 12 - 15

A large city has exactly seven towns— F, G, H, I, J, K, and L. A delivery service with four buses—Bus W, Bus X, Bus Y, and Bus Z—carries packages by bus from town to town at the complex. Each bus has a unique route, which it repeats throughout the day:

Bus W travels only from F to G. from G to H, from H to I, from I to J, and from J to F.
Bus X travels only from G to K and back lo G.
Bus Y travels only from H to J and back to H.
Bus Z travels only from I lo L and back to I.

Buses stop at each town to which they travel, and packages can be picked up or delivered at any stop. Any bus can also leave a package for any other bus to pick up at any town where both buses stop.

12. A package sent by bus can be delivered with no intermediate stops if it is sent from
(A) F to K
(B) G to F
(C) H to F
(D) I lo H
(E) J to H

13. On its way to any town in the complex, a package sent by bus from K. must travel to
(A) F
(B) G
(C) H
(D) I
(E) J

14. What is the minimum number of intermediate stops for a package sent by bus from F to J?
(A) One
(B) Two
(C) Three
(D) Four
(E) Six

15. Which of the following lists all of the buses, in the order of use, that would be needed to send a package by bus from L to H with the minimum number of intermediate stops?
(A) Bus Y, Bus W
(B) Bus Z. Bus W
(C) Bus W. Bus X, Bus Y
(D) Bus X. Bus W, Bus Z
(E) Bus Z, Bus W, Bus Y

Question No 16 - 19

A company Auditing company must audit each of seven companies—R, S, T, U, V, W, and X. The company will use two auditor, each of whom will be assigned a group of companies to audit. The companies will be divided into group 1 and group 2 according to the following conditions:

Each group must include at least three companies.
No company can be in both groups.
R must be in the same group as X.
If T is in group 1, W must be in group 1.
If U is in group 2, S must be in group 1.

16. Which of the following is an acceptable assignment of companies to groups?

	Group 1	Group 2
(A)	R, T, U, W	S, V, X
(B)	R, T, W, X	S, U, V
(C)	S, T, V, W	R, U, X
(D)	S, V, W, X	R, T, U
(E)	T, V, W	R, S, U, X

17. If S and W are in group 2, which of the following must be together in one of the groups?

(A) R and T
(B) R and V
(C) T and U
(D) T and V
(E) U and X

18. Any of the following could be true EXCEPT:

(A) R and T are in group 2.
(B) S and U are in group 1.
(C) W and X are in group 1
(D) R, V., and W are in group 1.
(E) U, V, and T are in group 2.

19. If R is in group 2 with only two other companies, which of the following must be in group 1?

(A) S
(B) T
(C) U
(D) V
(E) W

Test No 23

Question No 1 - 5

Exactly six workers F, G, H, I, J, and K— take turns watching a vehicle. To minimize the chance that the vehicle will observe them or will, escape their inspection, the workers will operate according to the following conditions:

There must be exactly two workers watching the vehicle at all times.
Whenever the vehicle travels by car, either H or I must be one of the two workers watching, but H and I cannot take a turn together.
Whenever the vehicle travels by train, either G or K must be one of the two workers watching, but G and K cannot take a turn together.
If K is one of the workers watching the vehicle, F must be the other worker watching the vehicle.
F and I cannot work together watching the vehicle.

1. If the vehicle is traveling by car, which of the following is a pair of workers who could be watching?

(A) F and G (B) F and I (C) G and J
(D) H and I (E) H and J

2. If the vehicle travels by train and G is not one of the workers watching, the pair watching must be

(A) F and J (B) F and K (C) H and K
(D) I and J (E) I and K

3. If J is one of the workers watching the vehicle, which of the following CANNOT be the other worker watching the vehicle?

(A) F (B) G (C) H (D) I (E) K

4. If the vehicle travels by car and F is one of the workers watching, the other worker watching the vehicle must be,

(A) G (B) H (C) I (D) J (E) K

5. If a pair of workers was watching while the vehicle traveled by car, and the same pair of workers continued watching after the vehicle began to travel by train, one member of that pair of workers must have been

(A) G (B) H (C) I (D) J (E) K

Question No 6 - 11

In a certain emergency rescue service, seven workers— F, G, H, I, J, K, and L—are assigned to accompany three mobile trauma vans during a single 12-hour shift. Each worker must be assigned to just one of the vans according to the following rules:

At least two workers must be assigned to van 1.

At least three workers, one of whom must be J, must be assigned to van 3.

If F is assigned to van I, I must also be assigned to van 1.
G must be assigned to van 2.
L cannot be assigned to van 3.

6. Which of the following is a possible assignment of the seven workers to the three vans?

	Van 1	Van 2	Van 3
(A)	F	G, H, I	J, K, L
(B)	F, I	G, J	H, K, L
(C)	F, G	I, L	H, J, K
(D)	I, L	G, F	H, J, K
(E)	I, G	H, L	F, J, K

7. If I is assigned to van 2, which of the following must be true?

(A) F is assigned to van I.
(B) K is assigned to van 3.
(C) H is assigned to van 1.
(D) H is assigned to van 3.
(E) L is assigned to. van 1.

8. If F and L are assigned to van 1, all of the following must be true EXCEPT:

(A) H is assigned to van 2.
(B) K is assigned to van 3.
(C) Exactly one worker is assigned to van 2.
(D) Exactly three workers are assigned to van 1.
(E) Exactly three workers are assigned to van 3.

9. If I and L are the only workers assigned to van 1, which of the following is the largest group of workers that could possibly be assigned to van 3 ?

(A) G, H
(B) H, K
(C) F, J, K
(D) F, H, J, K
(E) G, H, J, K

10. If exactly three workers are assigned to van 1, which of the following must be true?

(A) F is assigned to van 3.
(B) I is assigned to van 1.
(C) K is assigned to van I.
(D) F is assigned to the same van as I.
(E) G alone is assigned to van 2.

11. If I is the only worker not yet assigned, and if, at this point, I could be assigned to any one of the three vans, which of the following must be true?

(A) F is assigned to van 1.
(B) H is assigned to van 1.
(C) H is assigned to van 3.
(D) K is assigned to van 3.
(E) L is assigned to van 1.

Question No 12 – 15

A man will plant eight flower plants in eight in an even way spaced holes dug along a fence line. He has learned the following:

The types of flower plant that do well in his area are F, G, H, I, J, and K. He will make his selection from that group.

F, G, I, and J flower plants require cross-pollination to bear flower and must therefore be grown in pairs of a kind, immediately next to each other in the row.

If both plums and peaches are to be planted, each kind will produce more flowers if separated from the other kind by at least three other flower plants.

The man will plant no more than two flower plants of any one kind. He must organize a plan for planting that will maximize the probability that all of the flower plants he plants will bear as much flower as possible.

12. In a plan that meets his requirements, the man could plant exactly one of which of the following types of flower plants?

(A) F
(B) G
(C) I
(D) J
(E) K

13. If an F flower plant is planted in the first hole in the row along the fence, the flower plant planted in the second hole must be

(A) F flower plant
(B) G flower plant
(C) H flower plant
(D) K flower plant
(E) J flower plant

14. Which of the following is an acceptable order of flower plants in the row along the fence?

(A) F, F, J, I, K, J, I, K
(B) F, F, J, J, G, G, I, I
(C) I, F, F, J, J, H, K, I
(D) I, F, F, J, J, H, K, K
(E) K, I, I, H, F, F, F, H

15. If the man plants a I flower plant in the fourth hole in the row along the fence, he could plant a K flower plant in which of the following holes?

(A) The first
(B) The second
(C) The third
(D) The sixth
(E) The eighth

Question No 16 - 19

A manager who has exactly four tasks —R. S, T, and U—to undertake in a given month has made the following determinations:

R has priority over S.

T has priority over U.

If one task has priority over another, the task with priority must be started earlier than the other one.

16. Given only the determinations above, each of the following is a possible sequence in which the four tasks could be started EXCEPT

(A) R, S, T, U
(B) R, T, S, U
(C) R, T, U, S
(D) T, R, U, S
(E) T, S, R, U

17. If each of the tasks, takes equally long to perform, it must be true that

(A) R is performed before T is performed
(B) R is performed before U is performed
(C) S is performed before T is performed
(D) T is performed before S is performed
(E) T is performed before U is performed

18. There would be exactly one order in which the four tasks would have to be started if it were deter mined that

(A) R has priority over T
(B) R has priority over U
(C) T has priority over S
(D) U has priority over R
(E) 5 has priority over S

19. Which of the following pairs of additional determinations would NOT conflict with the priorities initially determined?

(A) R has priority over T. and U has priority over R.
(B) R has priority over U. and T has priority over S.
(C) S has priority over T. and T has priority over U".
(D) S has priority over T. and U has priority over R.
(E) S has priority over U, and U has priority over R.

Test No 24

Question No 1 - 5

From time to time, the President of a company appoints planning Boards, each consisting of exactly three members. Eligible for appointment are three executives from Marketing—R, S, and T—and three executives from Finance—U, V, and W. Any given Board is subject to the following restrictions on appointments:

At least one member must be from Marketing, and at least one member must be from Finance.
If R is appointed, S cannot be appointed.
Neither T nor V can be appointed unless the other is appointed also.
If U is appointed, W must also be appointed.

1. Which of the following is an acceptable Board?

(A) R, T and W (B) S, V, and W (C) T. U, and V
(D) T, V, and W (E) U, V, and W

2. If appointees from Marketing are in the majority on a Board, that Board must include

(A) R (B) S (C) U (D) V (E) W

3. If appointees from Finance are in the majority on a Board, that Board must include

(A) R (B) S (C) U (D) V (E) W

4. If R is appointed to the same Board as W, which of the following will be true of that Board?

(A) Appointees from Marketing are in the majority.
(B) Appointees from Finance are in the majority.
(C). S is a Board member.
(D) V is a Board member.
(E) U is not a Board member.

5. If the restrictions on appointments apply also to a four-member Board appointed from the same group of executives, which of the following will be true?

(A) If R is appointed, W must also be appointed.
(B) If S is appointed, U must also be appointed.
(C) If T is appointed, R must also be appointed.
(D) If V is appointed, S must also be appointed.
(E) If W is appointed, U must also be appointed.

Question No 6 - 11

Historians have established that a particular copy of a rare ballet recording was sold each month on New Month's Day for seven consecutive months, starting in January and ending in July. Each person who bought that copy of the record owned it only during that period and owned it for exactly a month. The seven owners of that copy of the record during this period were Javed, Kareem, Liaquat, Mehmood, Naeem, Omer, and Pervaiz. The following are all the additional facts the historians have discovered about the ownership of that copy of the record during the period January to July:

Liaquat sold it to Omer.
Pervaiz sold it to Mehmood.
Javed owned it before Omer owned it.
Naeem owned it before Liaquat owned it.

6. Which of the following could be true t-f that copy of the ballet record during the period January-July ?

(A) Javed sold it lo Omer.
(B) Liaquat sold it lo Mehmood.
(C) Naeem sold it to Liaquat.
(D) Omer sold it lo Naeem.
(E) Pervaiz sold it to Liaquat.

7. Which of the following must be true of that copy of the ballet record during the period January-July ?

(A) Javed owned it before Liaquat owned it.
(B) Liaquat owned it before Pervaiz owned it.
(C) Mehmood owned it before Pervaiz owned it.
(D) Naeem owned it before Mehmood owned it.
(E) Pervaiz owned it before Naeem owned it.

8. Which of the following could have sold that copy of the ballet record to Javed on New Month's Day, February?

(A) Liaquat (B) Mehmood (C) Naeem (D) Omer (E) Pervaiz

9. Which of the following must have owned that copy of the ballet record before New Month's Day, June?

(A) Javed (B) Kareem (C) Liaquat (D) Mehmood (C) Pervaiz

10. If Kareem owned that copy of the ballet record during March and sold it to Liaquat on New Month's Day in April, Mehmood must have bought it on New Month's Day in which of the following months?

(A) January (B) February (C) May (D) June (E) July

11. If Omer owned that copy of the ballet record during July, any one of the following could have owned it during May EXCEPT.

(A) Javed (B) Kareem
(C) Mehmood (D) Naeem
(E) Pervaiz.

Question No 12 - 15

The owner of a retail store is planning for displaying of five consumer products. Three are to be soap brands selected from F, G, H, I, and J, and two are to be shampoo brands selected from W, X, Y, and Z. The display brands are to be selected according to the following conditions

If F is displayed, Z must be displayed.

H cannot be displayed unless both G and W are also displayed.
If I is displayed, J must be displayed, and if J is displayed, I must be displayed.
If X is displayed, neither Y nor Z can be displayed.

12. Which of the following is an acceptable display?

(A) F, G, H, W, Z
(B) F, H, I, J, W
(C) G, H, J, W, X
(D) H, I, J, Y, Z
(E) I, J, W, X, Y

13. If F and Y are the first two display brands to be selected, how many acceptable groups of brands are there that would complete the display?

(A) 1
(B) 2
(C) 3
(D)4
(E) 5

14. If Y and Z are displayed, which of the following must also be displayed?

(A) F
(B) G
(C) H
(D) I
(E) W

15. If I and J are not displayed, all of the following must be displayed EXCEPT

(A) F
(B) H
(C) W
(D)Y
(E) Z

Question No 16 - 19

Exactly four young musicians are to attend a music workshop. The four are to be chosen from a group of seven eligible musicians: three boys— Fareed, Ghulam, and Hamid—and four girls—Junaid, Kiran, Minahal, and Nirma. The four are to be chosen according to the following conditions:

If either Ghulam or Hamid attends the workshop, the other must also attend.
Junaid and Kiran cannot both attend the workshop.
Ghulam and Minahal cannot both attend the workshop.

16. Which of the following could be the group attending the workshop?

(A) Fareed, Ghulam, Hamid, Minahal
(B) Fareed, Ghulam, Kiran, Nirma
(C) Fareed, Kiran, Minahal, Nirma
(D) Ghulam, Junaid, Minahal, Nirma
(E) Junaid, Kiran, Minahal, Nirma

17. If Hamid attends the workshop, which of the following CANNOT attend?

(A) Fareed (B) Ghulam (C) Junaid
(D) Minahal (E) Nirma

18. If two musician of each sex attend the workshop, which of the following is one of the musician who must attend?

(A) Fareed (B) Hamid (C) Junaid
(D) Kiran (E) Minahal

19. If Fareed and Junaid attend the workshop, which of the following pairs of musician could be the others attending?

(A) Ghulam and Kiran (B) Ghulam and Nirma
(C) Hamid and Minahal (D) Kiran and Minahal
(E) Minahal and Nirma

Test No 25

Question No 1 - 6

Six contestants, R, S, T, U, V, and W, are to be placed first (highest) through sixth (lowest), though not necessarily in that order, at the start of a singles Ping-Pong challenge contest.

R is placed above S.

V is placed above both T and U.

W is placed two places above T.

R is placed either third or fourth.

During the contest, a player may challenge only the player placed immediately above him or the player placed two places above him.

1. Which of the following is a possible initial placing from highest to lowest?

(A) V, T, W,R, U, S
(B) W, U, T,V,R,S
(C) W, S, T,R,V,V
(D) V, W, R, T, U, S
(E) V, W, T,R, U, S

2. If W is initially placed first, which of the following must also be true of the initial placing?

(A) V is placed second. (B) T is placed second. (C) R is placed third.
(D) S is placed fifth. (E) U is placed sixth.

3. If R is initially placed third, which of the following must also be true of the initial placing?

(A) V is placed first. (B) W is placed second. (C) S is placed fourth.

(D) U is placed fourth (E) U is placed sixth.

4. If W is initially placed third, and if W make the first challenge, which of the following contestants could W play in the first match?

I. R II. T III. U IV. V

(A) I and II only (B) I and III only (C) II and IV only

(D) III and IV only (E) I, II, and IV

5. If the first challenge of the contest is made by R against T, all of the following must be true of the initial placing EXCEPT

(A) W is placed first.
(B) V is placed second.
(C) T is placed third.
(D) R is placed fourth.
(E) U is placed fifth.

6. If V makes the first challenge of the contest against W, then which of the following must be true of the initial rankings?

(A) W is placed first. (B) V is placed third. (C) R is placed third.
(D) T is placed fourth. (E) S is placed fifth.

Question No 7 -12

Nine student—O, P, Q, R, S, T, U, V, and W—are the only student who can serve on three commissions designated A, B, and C, and each student must serve on exactly one of the commissions.

Commission A must have exactly one more member than does commission B.
It is possible that there are no members of commission C.
Neither O nor P nor Q can serve on commission A.
Neither R nor S nor T can serve on commission B.
Neither U nor V nor W can serve on commission C.

7. If U and O are the only students serving on commission B, how many of the nine student must serve on commission C?

(A) 3
(B) 4
(C) 5
(D) 6
(E) 7

8..Of the nine student, the greatest number that can serve together on commission C is

(A) 9
(B) 8
(C) 7
(D) 6
(E) 5

9. If W is the only student serving on commission B, which of the following must serve on commission A?

(A) R and V (B) S and T (C)S and U
(D)T and V (E) U and V

10. If none of the nine student serves on commission C, which of the following must be a student who serves on commission A?

(A) O
(B) P
(C) R
(D) U
(E) V.

11. If U, V, and Q are the only students serving on commission B, the complete membership of commission C must be

(A) O and P
(B) O and R
(C) P and S
(D) P and T
(E) Q and S

12. Which of the following groups could constitute the membership of commission C?

(A) P and U
(B) Q and T
(C) P, Q, and R
(D) R, S, and T
(E) O, Q, T, and W

Question No 13 - 16

Researchers are testing numerous petrol samples for the presence of three chemicals—U, V, and W. Each sample contains one or more of the chemicals, U, V, and W but no other chemicals. The practicals available to the researchers and the result the practicals produce are as follows;

> If the sample contains U but not V, practical R gives a positive result. Practical R gives a negative result otherwise.
> If the sample contains U or V or both, or if the sample has already been subjected to practical R, practical S gives a positive result. Practical S gives a negative result otherwise.
> If the sample contains W and has already been subjected to practical S, practical H gives a positive result. Practical H gives a negative result otherwise.

13. If a sample is subjected to practical S and the result is negative, then of the three chemicals, the sample must contain

(A) U only (B) W only (C) U and V only
(D) U and W only (E) V and W only

14. Which of the following practicals, if performed as specified, will give a result that in itself does NOT tell researchers anything about the chemical content of a sample?

(A) R, performed first (B) S, performed first
(C) H, performed first (D) R, performed after S
(E) S, performed after H

15. If a sample is subjected to the three practicals in the order R, S, and H, and if only practical S is positive, which of the following could be the sample's chemical content?

(A) U only (B) V only (C) W only
(D) U and W only (E) U, V and W

16. If researchers know that, of two samples, one contains U only and one contains V only, but they need to determine which sample contains which chemical, they do so with the least amount of testing if they subject

(A) either sample to practical R
(B) either sample to practical S
(C) either sample to practical H
(D) both samples to practical R
(E) both samples to practical S

Question No 17 – 20

A foundation has appointed two review panels to consider all projects to the foundation for funding. The members of one review panel are Kaleem, Liaquat, and Muneer, and they judge the merits of the projects for which funding is sought. The members of the other panel are Waseem, Rizwan, and Sarfraz, and they judge each applicant's qualifications. A project for funding is approved if the combined vote-tallies from both panels yield a majority in support; otherwise, the project is rejected. The following generalizations about the voting hold without exception:

Each of the six reviewers casts either a vote in support of or else a vote opposite any project that is reviewed.

Kaleem, Liaquat, and Muneer do not all vote the same as one another on any project, nor do Waseem, Rizwan, and Sarfraz ever all vote the same as one another.

Kaleem's vote is the opposite of Rizwan's vote on all projects.

Muneer's vote is the same as Waseem's vote on all projects.

17. Which of the following could be the distribution of votes on an project for funding?

	In Support	Opposite
(A)	Kaleem	Liaquat, Muneer, Waseem, Rizwan, Sarfraz
(B)	Liaquat/Muneer	Kaleem, Waseem, Rizwan, Sarfraz
(C)	Kaleem, Liaquat, Rizwan	Muneer, Waseem, Sarfraz
(D)	Kaleem, Liaquat, Sarfraz	Muneer, Waseem, Rizwan
(E)	Liaquat, Waseem, Sarfraz	Kaleem, Muneer, Rizwan

18. If a project is to be approved, the vote of which of the following must be in support?

(A) Kaleem
(B) Liaquat
(C) Muneer
(D) Rizwan
(E) Sarfraz

19. On a project on which Kaleem's vote is the same as Liaquat', the votes of which of the following two reviewers must be the same as each other?

(A) Kaleem and Waseem
(B) Liaquat and Muneer
(C) Muneer and Sarfraz
(D) Waseem and Rizwan
(E) Rizwan and Sarfraz

20. If Rizwan voted in support of a project and whole votes are tied, which of the following is pair of reviews whose votes must be dissimilar from each other?

(A) Kaleem and Liaquat
(B) Kaleem and Waseem
(C) Liaquat and Rizwan
(D) Muneer and Sarfraz
(E) Waseem and Rizwan

Answer of Question

Test No	1	2	3	4	5	6	7	8	9	10	11	12	13
Question													
1	C	D	A	B	D	A	C	D	D	E	C	E	E
2	D	B	B	D	E	C	E	A	B	A	E	D	A
3	D	C	E	C	B	B	D	A	C	C	A	E	B
4	A	E	A	E	E	B	E	B	D	A	C	C	D
5	A	E	D	E	E	E	C	E	A	C	B	B	A
6	B	D	B	D	C	B	D	C	D	B	D	A	E
7	A	B	C	A	D	B	D	D	E	C	B	E	C
8	C	E	B	D	A	A	B	D	D	B	D	C	E
9	C	C	E	E	D	E	A	B	E	E	D	B	A
10	B	C	E	A	E	C	E	E	D	A	E	A	D
11	D	E	E	C	A	C	A	C	A	D	C	D	B
12	D	D	A	C	E	A	E	E	B	C	B	B	D
13	D	B	B	D	E	C	E	C	A	D	A	B	E
14	E	D	C	D	D	E	B	A	E	A	B	C	E
15	C	B	D	A	D	D	D	D	C	B	D	C	E
16	C	C	C	D	D	B	A	B	D	C	A	A	C
17	E	D	B	A	A	C	D	B	B	B	D	D	C
18	E	A	D	D	B	C	C	E	A	E	D	B	B
19	C	B	C	E	B	E	E	A	C	E	C	A	--
20	A	D	A	B	D	E	E	--	A	E	--	--	--
21	A	B	D	B	E	B	--	--	E	C	--	--	--

Test No	14	15	16	17	18	19	20	21	22	23	24	25
Question												
1	D	D	C	C	A	C	B	A	A	E	D	D
2	E	E	E	E	D	E	B	C	D	B	D	A
3	A	E	D	D	D	A	C	D	B	E	E	A
4	C	B	E	B	B	E	E	B	C	B	B	D
5	C	D	A	B	E	D	E	B	D	A	A	E
6	B	C	A	D	B	E	B	D	E	D	C	A
7	D	A	C	A	A	B	E	C	A	E	A	B
8	C	E	A	A	C	C	E	C	C	A	C	D
9	D	B	E	E	D	B	D	A	E	D	A	E
10	A	A	A	D	D	D	A	A	D	E	E	C
11	B	C	A	E	D	E	C	D	A	E	E	A
12	E	A	A	E	A	E	A	C	E	E	A	B
13	A	B	E	E	C	C	E	D	B	A	A	B
14	E	C	E	B	E	A	E	D	B	B	D	A
15	E	A	C	D	D	D	D	A	E	E	D	C
16	D	C	D	B	A	B	C	D	C	E	C	C
17	B	E	C	C	D	D	B	E	E	E	D	D
18	E	D	A	E	B	E	A	E	D	D	B	C
19	--	--	D	D	--	E	--	C	E	B	E	D
20	--	--	--	--	--	--	--	--	--	--	--	D

Part 4

Solution of Tests

Test No 1

Question No 1- 5

Foreign Office Officers F, G, H, I, J, K
Foreign Office Hot (L, M) Cold (R, S)

Rules

Rule I each Foreign Office must have at least one Foreign Office Officer
Rule II at least one Cold Foreign Office must have at least Two Foreign Office Officer
Rule III G ≠ K
Rule IV I ↔ Hot Foreign Office L/M
Rule V J ↔ Cold Foreign Office R/S

Question No 1

1st Step Check Rule II A is wrong
2nd Step Check Rule III B is wrong
3rd Step Check Rule IV E is wrong
4th Step Check Rule V D is wrong

So, Choice C is correct.

Question No 2

As Rule IV, I ↔ Hot Foreign Office L/M,
So Choice D is correct.

Question No 3

		L	M	R	S
(A)	Yes True as	I	H, F	J, G	K
(B)	Yes True as	I	H, F	J, G	K
(C)	Yes true	I, H	F	J, G	K
(D)	Cannot be true as Rule I	I,	F, H, K	J,	G

So, Choice D is correct.

Question No 4

	L	M	R	S
As Question	G	K		
As Rule IV, I ↔ L/M, so	I, G	K		
As Rule V, J ↔ R/S, so	I, G	K	J	
Remaining officer as Rule I & Rule II	I, G	K	J	F, H

Check the relevant Choice,
Choice A is correct.

Question No 5

	L	M	R	S
As question and Rule III			G	H, K
As Rule IV, I ↔ L/M, so	I		G	H, K
As Rule V, J↔ R/S, J→ R	I		J, G	H, K
Remaining as Rule I, so F → M	I	F	J, G	H, K

Check the relevant Choice,
Choice A is correct.

Question No 6-11

Furniture Table, B, B, C

Rules

Rule I, Colors B, G, P, W

Rule II, after completion Color G must be one of any furniture.

Rule III, C → B/P

Rule IV, if any furniture is either orange or yellow, then after completion of painting it must be white. (O/Y → W)

Rule V, if any furniture is Purple, then after completion of painting it must be Purple. P → P

Question No 6

1st Step	Check Rule II	A, D is wrong
2nd Step	Check Rule III	E is wrong
3rd Step	Check Rule I	C is wrong

So, Choice B is correct.

Question No 7

	Table	B	B	C
Prior to painting (As question)		O	P	
O color Bed must be paint white as Rule IV.		W		
P color Bed must be paint Purple as Rule V.		W	P	
As Rule III, C → B/P then		W	P	B/P
Table must be green as Rule II	G	W	P	B/P

Check the choice.

Choice A is correct.

Question No 8

	Table	B	B	C
Prior to painting	W	W	W	G
As Rule III, C → B/P, so Chair color will change				1
As Rule II, one color of any remaining furniture Will be change into green.	2			1

Two colors must be change from prior to painting

So Choice C is correct.

Question No 9

As Rule III, C → B/P

Choice	Prior	after	Restriction
A	B	B/P	No Rule restriction
B	Gray	B/P	No Rule Restriction
C	P	P	as Rule V

So, Chair cannot be Purple color.

Choice C is correct.

Question No 10

	Table	B	B	C
Prior to painting	W	O	P	G
As Rule IV, O/Y → W, so		W		
As Rule V, P → P, so		W	P	
As Rule III, C→ B/P, and so	W	P	B/P	
Remaining Table color must be Green as Rule II, so	G	W	P	B/P

Check the choice,
Choice B is correct.

Question No 11

As Rule III C → B/P, and as Rule V, P → P,
So Chair cannot be Purple color, if Chair is Purple color then all four piece will be Purple after painting and then Rule II does not follow, so Chair can be any color except Purple, check the choice.
Choice D is correct.

Question No 12- 14

House Design F, G, H, I, J, K, L
Several Blocks Each block consist of at least three house designs

Rules

Rule I, $L \leftrightarrow J$

Rule II, $B_n \Rightarrow (H + K)$ then $B_{n\pm1} \Rightarrow (I + L)$

Rule III, $B_n \Rightarrow (G + L)$ then $B_{n\pm1} \neq (I + J)$

Rule IV, $H \neq F$

Question No 12

1st Step	Check Rule I	C, E is wrong
2nd Step	Check Rule IV	B, A is wrong

So, Choice D is correct.

Question No 13

As question, Block has H and K house design, so adjacent block must have I and L house design, as Rule II,
As adjacent block has house design L, then as Rule IV, J house design also in same block.
Check the choice,
Choice D is correct.

Question No 14

As question, Block has H and K house design, so adjacent block must have I and L house design, as Rule II,
As adjacent block has house design L, then as Rule IV, J house design also in same block.
So, adjacent block must have I, L, and J House Design.
Check the choice,
Choice E is correct, as only E Choice consist of all I, L, J House Design

Question No 15-21

Caps	1, 2, 3, 4, 5, 6
Paper's Color	G, M, O, P, S, W

Rules

Rule I	P<O
Rule II	S=M±1
Rule III	G=5

New Rules,

New Rule I, As Rule III and II, G=5 & S=M±1. Then (S/M) < G, because if M=6 then S = 5, 7 and as G= 5 so S ≠ 5, and S ≠ 7 as only 6 caps, so M≠ 6. Then (S/M) < G,

New Rule II, As Rule III & II, G= 5 and P< O, then P < G, because P ≠ 6. If P =6 then Rule I cannot be fulfill, So P < G.

Question No 15

1st Step	Check Rule III	A, B is wrongs
2nd Step	Check Rule I	D is wrong
3rd Step	Check Rule II	E is wrong

So, Choice C is correct.

Question No 16

M =4 then S = 3, 5 as Rule II. S ≠ 5 as G = 5 as Rule III, then S = 3

Choice C is correct

Question No 17

As New Rule I & Rule III, S/M < G and G = 5, then S/M < 5, So S&M ≠ 6

As New Rule II & Rule III, P < G and G =5 then P < 5, so P ≠ 6

Remaining colors O & W can be at 6th Cap. Check the choice.

Choice E is correct.

Question No 18

P = 4, then O =5, 6 as Rule I. O ≠ 5 because G =5 as Rule III. Then O = 6

Choice E is correct.

Question No 19

Check the statements by New Rules

Choice C is correct as New Rule II.

Question No 20

	1	2	3	4	5	6
As question		O				
As Rule I, P < O, so P =1	P	O				
As Rule III, G = 5,	P	O			G	
As New Rule I, S/M < G, so S/M = ¾	P	O	S/M	M/S	G	
As remaining	P	O	S/M	M/S	G	W

Check the choice.

Choice A is Correct.

Question No 21

	1	2	3	4	5	6
As question	M					
As Rule II & III, S =2, G =5.	M	S			G	
As Rule I, O ≠3 and P ≠ 6, then						
Following three options can be						
Option I	M	S	P	O	G	W
Option II	M	S	P	W	G	O
Option III	M	S	W	P	G	O

Now check the choice,

Choice A is correct, as in all three Option G and O are adjacent to each other.

Test No 2

Question No 1 - 5

Three Green dress Two Blue dress Two White dress One Tan dress

Rules

Rule I, at least one of Blue dress next to White dress
B =W + 1
Rule II, T ≠ W +1
Rule III, three Green dress cannot be consecutive
Rule IV G = 5
Rule V, W = 1or 8 or both

Question No 1

1st Step Check Rule IV B is wrong
2nd Step Check Rule I E is wrong
3rd Step Check Rule III C is wrong
4th Step Check Rule II A is wrong
So, Choice D is correct.

Question No 2

	1	2	3	4	5	6	7	8
As question				G				
As Rule IV				G	G			
Then G ≠ 6, 3 as Rule III,								
Check the choice								
Choice B is correct.								

Question No 3

	1	2	3	4	5	6	7	8
As question	B	B						
As Rule IV	B	B			G			
As Rule I	B	B	W		G			
As Rule V	B	B	W		G			W
T ≠ 4 as Rule II, so G= 4	B	B	W	G	G			W
As Rule II, T = 6 then G= 7	B	B	W	G	G	T	G	W
Check the relevant choice,								
Choice C is correct.								

Question No 4

	1	2	3	4	5	6	7	8
As question		T						
As Rule IV		T			G			
W ≠ 1 as Rule II, so W = 8								
As Rule V		T			G			W
Remaining can display anywhere								
Check the choice,								
Choice E is correct.								

Question No 5

	1	2	3	4	5	6	7	8
As question	G		G					
As Rule IV	G		G		G			
As Rule IV	G		G		G			W
T ≠ 7 as Rule II, W/B =7								
Check the choice								
Choice E is correct.								

Question No 6- 11

Tasks A, B, C, D, E, F, G, H

Inst 1 → Group 1 Inst 2 → Group

Rules

Rule I, A & C must perform at same time, or $A_n = C_n$ (n show No of Tasks)

Rule II, B & D must perform at same time, or $B_n = D_n$

Rule III, E ↔ A

Rule IV, F ↔ D

Rule V, G = Inst 2 and 2nd Task

New Rules

New Rule I, as Rule I, A & C not in same Inst

New Rule II, as Rule II, B & D not in same Inst

Question No 6

1st Step Check New Rule I A is wrong

2nd Step Check New Rule II B, C is wrong

3rd Step Check Rule III E is wrong

So, D is correct.

Question No 7

F = Inst 1 then D = Inst 1 as Rule IV

D = Inst 1 then B = Inst 2 as New Rule II

Choice B is correct.

Question No 8

As question, $E_n = F_n$

	Inst 1				Inst 2			
	1	2	3	4	1	2	3	4
As Rule V, G = Ring2 at 2nd						G		
As question			E			G	F	
As Rule III, A ↔ E, so	A		E			G	F	
As Rule I, $A_n = C_n$	A		E		C	G	F	
As Rule IV, F ↔ D, D= Inst 2	A		E		C	G	F	D
As Rule II, $B_n = D_n$, so B= Ring1	A		E	B	C	G	F	D
Remaining	A	H	E	B	C	G	F	D

Check the choice,

Choice E is correct.

Question No 9

	Inst 1				Inst 2			
	1	2	3	4	1	2	3	4
As question					D	G	F	C
As Rule I & II, B= 1& A =4	B			A	D	G	F	C
Remaining	B	E/H	H/E	A	D	G	F	C

Check the choice,

Choice C is correct.

Question No 10

	Inst 1				Inst 2			
	1	2	3	4	1	2	3	4
As question& Rule V						G	A	E
As Rule I, C= 3in Inst 1			C			G	A	E
As Rule IV, F↔D, so								
F&D ≠ Ring2 then F&D = Ring1	D		C	F		G	A	E
As Rule II, B = Inst 2	D	C	F	B	G	A	E	
As remaining	D	H	C	F	B	G	A	E
Check the choice,								
Choice C is correct.								

Question No 11

A +1 = F = E -1	Inst 1				Inst 2			
	1	2	3	4	1	2	3	4
As question	A	F	E					
As Rule IV, F ↔ D, so	A	F	E	D				
As Rule I, $A_n = C_n$, so	A	F	E	D	C			
As Rule II, $B_n = D_n$, so	A	F	E	D	C			B
As Rule V,	A	F	E	D	C	G		B
As remaining	A	F	E	D	C	G	H	B
Check the choice,								
Choice E is correct.								

Question No 12- 14

Course Area	Marketing	Finance	Human resources

Rules

Rule I, $F \geq 6$ Course

Rule II, M & $H.S \geq 5$

Rule III, $3 \leq M \geq 1$

Question No 12

Check remaining Rule II & Rule III,

Choice	Course	Yes/No
A	3H + 3 H.S	Yes
B	2 M + 4 H.S	Yes
C	1 M + 1 F + 4 H.S	Yes
D	1 M + 2 F +3 H.S	No as Rule II, M & H.S ≥ 5
E	3 M + 1 F + 2 H.S	Yes

So, Choice D is correct.

Question No 13

Minimum No. of Course from M & H.S	= 5
Less Maximum No. of Course from M	= (3)
Minimum No. of Course from H.S	= 2

Choice B is correct.

Question No 14

As 2nd question, Minimum No. of Course from H.S is Two, so at least one course must be select from H.S

Choice D is correct.

Question No 15- 21

Boy Singer	F, G	Girl Singer	H, I
Boy Comedian	J, K	Girl Comedian	L, M

Rules

Rule I, two singer and two comedian cannot perform consecutively
Rule II, First actor will be girl and second boy
Rule III, last performer must be boy singer

New Rule

Rule I, only possible if each and every singer perform evenly and each and every comedian perform oddly
Or each and every singer perform oddly and each and every comedian perform evenly

	1	2	3	4	5	6	7	8
As Rule III,								B.S
Then as New Rule,		S		S		S		B.S
Then remaining	C	S	C	S	C	S	C	B.S
As Rule II,	F. C	M, S	C	S	C	S	C	B.S
Girl comedians are L & M								
Boy singers are P & S, so	L/M	F/G	C	S	C	S	C	G/F

This will be sequence of performer.

Question No 15

As New Rule, last perform are S or P.
Check the Choice,
Choice B is correct.

Question No 16

As New Rule, first performers are L or M.
Check the Choice,
Choice C is correct.

Question No 17

	1	2	3	4	5	6	7	8
As New Rule	L/M	F/G	C	S	C	S	C	G/F
As question	L/M	F/G	C	H	C	S	C	G/F

Sixth performer must be singer and remaining singer is only I, so I = 6.
Choice D is correct.

Question No 18

	1	2	3	4	5	6	7	8
As New Rule	L/M	F/G	C	S	C	S	C	G/F
As question, M = 7	L/M	F/G	C	H	C	S	M	G/F
Then L = 1	L	F/G	C	H	C	S	M	G/F

Choice A is correct.

Question No 19

	1	2	3	4	5	6	7	8
As New Rule	L/M	F/G	C	S	C	S	C	G/F
P & S = 2 or 8,								
As question P = 8 then								
S = 2	L/M	S	C	S	C	S	C	P

So, Choice B is correct.

Question No 20

	1	2	3	4	5	6	7	8
As New Rule	L/M	F/G	C	S	C	S	C	G/F
As question, J = 3	L/M	F/G	J	S	C	S	C	G/F

Then only fifth and seventh position remaining for comedian.
So, Choice D is correct.

Question No 21

	1	2	3	4	5	6	7	8
As New Rule	L/M	F/G	C	S	C	S	C	G/F
As question, L = 3, I = 4								
And K = 5	M	F/G	L	I	K	S	C	G/F
As remaining,	M	F/G	L	I	K	H	J	G/F

So, Choice B is correct.

Test No 3

Question No 1 - 5

Women F, H, J, K, M, S, T, R
Lake Group Mountain Group
Four member each group

Rules

Rule I, $T_1 \neq R_1$

Rule II, $T_2 = R_2 \rightarrow$ Lake Group

Rule III, $F_M \rightarrow K_M$

Rule IV, J = M

Question No 1

1st Step	Check Rule I	D, E is wrong
2nd Step	Check Rule IV	B, C is wrong

So, A is correct.

Question No 2

	Lake Group	Mountain G
As question	M	
As Rule II, $T_2 = R_2 \rightarrow$ Lake Group, so	M, T, R	
As Rule IV, J = M, J → Lake Group	M, T, R, J	
Then remaining in Mountain Group	M, T, R, J	F, H, K, S

Check the choice
Choice B is correct.

Question No 3

As question, S ≠ T, and as Rule I, $T_2 = R_2$. So in first week "S" must be with Raheela.
Choice E is correct.

Question No 4

	Lake Group	Mountain G
As question		J,
As Rule IV, J =M, so M→ Mountain Group		J, M
As Rule I, (T or R) → Mountain Group, so	T/R	J, M, R/T
F ≠ Mountain Group as Rule III, $F_M \rightarrow K_M$ Because only one member remaining.		
So F → Lake Group	T/R, F	J, M, R/T

Remaining women can join any group
Check the choice,
Choice A is correct.

Question No 5

As Rule I & II, $T_1 \neq R_1$ & $T_2 = R_2 \rightarrow$ Lake Group
So one of T and R must change group but not both change the group.
Choice A, B, C is wrong as these choices not containing T or R.
Choice E is wrong as it containing both T and R.
Choice D is correct.

Question No 6 - 11

Candidates F, G, J, M, N, P, T

Interview = 30 Minutes Starting at 9:00 am than Closing Time at 12:30 pm

Interview Numbering,	1	2	3	4	5	6	7
	9:00am	9:30	10:00	10:30	11:00	11:30	12:00pm

Rules

Rule I, G = (1 or 4)
Rule II, P = (G +1) or (N+1)
Rule III, M < N < F
Rule IV, J = T +2

Question No 6

1st Step	Check Rule I	C is wrong
2nd Step	Check Rule II	E is wrong
3rd Step	Check Rule III	A is wrong
4th Step	Check Rule IV	D is wrong

So, B is correct.

Question No 7

	Candidates can be
All Candidates	F, G, J, M, N, P, T
J ≠ 1 as Rule IV, so	F, G, M, N, P, T
P ≠ 1 as Rule II, so	F, G, M, N, T,
N ≠ 1 as Rule III, so	F, G, M, T
F ≠ 1 as Rule III, so	G, M, T

Remaining can star interview at 9:00am
Check the choice,
Choice C is correct.

Question No 8

As Rule IV, J = T +2, so J can begin earliest interview if T begin interview at 9:00am
Then J = 3 or at 10:00am
So, Choice B is correct.

Question No 9

	1	2	3	4	5	6	7
As Rule III and as question	M	N					
As Rule I, then G = 4	M	N		G			
As Rule II, P = 3 or 5							
Option I	M	N	P	G			
Option II	M	N		G	P		
Option II, is wrong as Rule IV,							
Because J =T +2							
So Option I with Rule IV	M	N	P	G	T		J
Remaining	M	N	P	G	T	F	J

So, Choice E is correct.

Question No 10

T = P+1 and P = N + 1

	1	2	3	4	5	6	7
As Rule I,	G						
As Rule III, and as question	G	M	N	P	T		
As Rule IV, J =T + 2, so J = 7	G	M	N	P	T		J

And time interval between G and J is 3 Hours

So, Choice E is correct.

Question No 11

	1	2	3	4	5	6	7
As question	T						
As Rule IV, J = 3	T		J				
As Rule I, G = 4	T		J	G			
Remaining as Rule II & III,							
Option 1	T	M	J	G	P	N	F
Option 2	T	M	J	G	N	P	F

So, Choice E is correct.

Question No 12 - 14

Books F G H I J K L

Set 1 = Four Books Set 2 = Three Books

Rules

Rule I, $F \neq G$

Rule II, $J_2 = L_2$

Rule III, $L_1 = I_1$

Question No 12

As Rule I, F ≠ G, so G cannot be in Set 2

Choice A is correct.

Question No 13

	Set 1				Set 2		
As question	L						
As Rule III,	L	I					
As Rule II, $J_2 = L_2$, so J must in Set 1, if J = 2 then L = 2 which is Wrong	L	I	J				
As Rule I,	L	I	J	G/F			
As remaining	L	I	J	G/F	H	K	F/G

Check the Choice,

Choice B is correct.

Question No 14

	Set 1				Set 2		
As question					J		
As Rule II, $J_2 = L_2$					J	L	
As Rule I,					J	L	F/G
As remaining	H	K	I	G/F	J	L	F/G

Check the Choice,

Choice C is correct.

Question No 15 - 21

Doggies	R	V	W	X	Y	Z
Schedule	1	2	3	4	5	6

Rules

Rule I, $W \neq X \pm 1$
Rule II, $V = Z - 1$
Rule III, $R = 4$

Question No 15

1st Step	Check Rule III	C is wrong
2nd Step	Check Rule I	B, E is wrong
3rd Step	Check Rule II	A is wrong

So, Choice D is correct.

Question No 16

	1	2	3	4	5	6
As question and Rule III,		V		R		
As Rule II, V = Z – 1, so Z = 3		V	Z	R		
As Rule I, W ≠ X ± 1, and remaining						
Option 1	W/X	V	Z	R	X/W	Y
Option 2	W/X	V	Z	R	Y	X/W

Check the Choices,
Choice C is correct.

Question No 17

Take each choice and put the Doggies according to the Rules

Choice	1	2	3	4	5	6
A	X	V	Z	R	W	Y
B		X		R	V	Z

X cannot be second, because if X = 2 then Rule I or Rule II, cannot be fulfill.
So, Choice B is correct.

Question No 18

	1	2	3	4	5	6
As question and Rule III,	V			R		
As Rule II, V = Z – 1, So Z = 2	V	Z		R		
As Rule I, W ≠ X ± 1 and remaining,						
Option 1	V	Z	W/X	R	X/W	Y
Option 2	V	Z	W/X	R	Y	X/W

Check the choices,
Choice D is correct.

Question No 19

	1	2	3	4	5	6
As question and other Rules						
Option 1	V	Z	W	R	Y	X
Option 2	W	V	Z	R	Y	X

Check the choices,
Choice C is correct.

Question No 20

Z < W, then as Rule II, V = Z – 1, so V < W,then V and Z can examine only at first three slots,

	1	2	3	4	5	6
As Rule III, and above explanation						
Option 1	V	Z		R		
Option 2		V	Z	R		
As Rule I, W ≠ X ± 1, then						
Option 1	V	Z	W/X	R	X/W	Y
Option 2	V	Z	W/X	R	Y	X/W
Option 3	X	V	Z	R	W/Y	Y/W

Check the Choices,

Choice A is correct.

Question No 21

W, Y > R	1	2	3	4	5	6
As question and Rule III,				R	W/Y	Y/W
As Rule II, V = Z – 1, so						
Option 1	V	Z	X	R	W/Y	Y/W
Option 2	X	V	Z	R	W/Y	Y/W

Check the choices,

Choice D is correct.

Test No 4

Question No 1 - 5

Famous Places F, R, H, L, M, C, T

Rules

Rule I, $F \leq 3$
Rule II, $H = R - 1$
Rule III, $L \neq 1, 7$
Rule IV, $M = 1/7$
Rule V, $C \geq 5$

Question No 1

1st Step Check Rule IV C is wrong
2nd Step Check Rule I E is wrong
3rd Step Check Rule II A, D is wrong
So, Choice B is correct.

Question No 2

	1	2	3	4	5	6	7
As question as Rule I,	T	L	F				
As Rule IV, M =1/7, M ≠ 1, so	T	L	F				M
As Rule V, C ≥ 5 then							
Option 1	T	L	F			C	M
Option 2	T	L	F		C		M
As Rule II, H = R – 1, then Option 2							
is wrong, then	T	L	F	H	R	C	M

Choice D is correct.

Question No 3

	1	2	3	4	5	6	7
As question and Rule II,	H	R					
As Rule I,	H	R	F				
As Rule IV, M = 1/7, so	H	R	F				M
As Rule V, C ≠ 4							
Remaining T and L can be fourth	H	R	F	T/L	L/T	C	M

Check the choices,
Choice C is correct,

Question No 4

	1	2	3	4	5	6	7
As question						C	

As Rule II, H = R – 1, then H ≠ 5,
If H = 5 then R = 6 which is wrong
So, Choice E is correct.

Question No 5

As question, only possible if, F must be 3rd and C must be 5th Place of visit.

	1	2	3	4	5	6	7
as question			F		C		

H & R ≠ 4, as Rule II, H = R – 1,
As Rule IV, M ≠ 4
Then remaining L or T must be fourth, and then Choice E is correct.

Question No 6 - 12

Tasks	J, K, L, M, N, O					
Days	Mon	Tus	Wed	Thur	Fri	Sat
Numbering	1	2	3	4	5	6

Rules

Rule I, $J < L$

Rule II, $M = O \pm 1$

Rule III, $N = 4$

Question No 6

1st Step	Check Rule III,	B is wrong
2nd Step	Check Rule I,	C, is wrong
3rd Step	Check Rule II,	A, E is wrong

So, Choice D is correct.

Question No 7

As Rule I, $J < L$, so $J \neq 6$, if $J = 6$ then $L = 7$, which is wrong

Choice A is correct.

Question No 8

	1	2	3	4	5	6
As question and Rule III,			K	N		
Then as Rule I & II, there are two options						
Option 1	J	L	K	N	M/O	O/M
Option 2	M/O	O/M	K	N	J	L

Check the choice,

Choice D is correct.

Question No 9

	1	2	3	4	5	6
As question and Rule III,	O			N		
As Rule II,	O	M		N		
As second question $J \neq 6$, so $J = 3, 5$						
and remaining						
Option 1	O	M	J	N	L	K
Option 2	O	M	K	N	J	L

Check the choice,

Choice E is correct.

Question No 10

	1	2	3	4	5	6
As question and Rule III,		J		N		
Then for fulfill Rule II, O/M must at 5/6		J		N	O	M
As Rule I, $J < L$, $L = 3$		J	L	N	O	M
As remaining	K	J	L	N	O	M

Check the choice,

Choice A is correct.

Question No 11

	1	2	3	4	5	6
As question and Rule III,		M		N		
As Rule II, M = O ± 1, so O = 1 or 3						
Option 1	O	M		N		
Option 2		M	O	N		
As Rule I, J < L,						
Option 1	O	M	J	N	L	
Option 2	J	M	O	N	L	
Check the choice,						
Choice C is correct.						

Question No 12

	1	2	3	4	5	6
As question and Rule III,				N	K	
As Rule II, M = O ± 1, so						
Option 1	M	O		N	K	
Option 2		M	O	N	K	
As Rule I, J < L, so						
Option 1	M	O	J	N	K	L
Option 2	J	M	O	N	K	L
Check the choice,						
Choice C is correct.						

Question No 13 - 15

Digits 6, 7, 8, 9
Letters L, M, N, O

Rules

Rule I, Code consist of two digits and two letters
Rule II, two digits must next to each other and two letters must to each other
Rule III, Left digit < Right digit
Rule IV, Two letter must be different

Question No 13

	L	L	D	D
As question				8
As Rule III, Left digit < Right digit				
So 6 or 7 can be third symbol			6/7	8

Check the Choice
Choice D is correct.

Question No 14

	L	L	D	D
As question	L			
As Rule V, so M, N or O can be second letter, so	L	M/N/O		

Check the Choice,
Choice D is correct.

Question No 15

	D	D	L	L
As question	7			
As Rule III, Left digit < Right digit				
So 8 or 9 can be second symbol	7	8/9		

Check the Choice,
Choice A is correct.

Question No 16 - 22

K writer		G	I	J		
Y writer		M	N	P		
Essay pages	3	6	9	12	15	18

Rules

Rule I, 3, 9, 15 pages poems must be publish of one Writer
Rule II, I < P
Rule III, M < J

New Rule

As Rule I, then on remaining page, Essay of other poet will be publish.

Question No 16

1st Step	Check Rule I	A, C is wrong
2nd Step	Check Rule II	E is wrong
3rd Step	Check Rule III	B is wrong

So, Choice D is correct.

Question No 17

As Rule III, M < J, then J cannot be at page 3, because then Rule III, cannot be fulfill
So, Choice A is correct.

Question No 18	3	6	9	12	15	18
As question & New Rule,		N		M/P		P/M
As Rule III, M ≠ 18, then M = 12		N		M	J	P
Remaining	G/I	N	I/G	M	J	P

Choice D is correct.

Question No 19

K's Essay appear on page 3, then Y's Essay will appear on page 18 as New Rule, and as Rule III, M < J, so M ≠ page 18, then only N & P = page 18, check the choices,
Choice E is correct.

Question No 20

	3	6	9	12	15	18
As question					G	N
As G = 15, then I & J will be on Page 3 & 9 as New Rule, and as Rule III, M < J, so J ≠ 3 then	I		J		G	N
Remaining as Rule III,	I	M	J	P	G	N

Choice B is correct.

Question No 21	3	6	9	12	15	18
As question		P				
As Rule II, I < P, so	I	P				
G or J = 9, but as Rule III, M < J, so J ≠ 9 then G = 9	I	P	G		J	
Remaining as Rule III,	I	P	G	M	J	N

Choice B is correct.

Question No 22

<u>Essay can be on page 9</u>
G,J, M, N, P
As New Rule, G and J cannot be on page 9, so M, N, P
As Rule II, I < P, so P cannot be 9 when I =12,so M,N
Check the choices,
Choice C is correct.

Test No 5

Question No 1 - 5

Article	B,	BI,	P,	SN,	C,	S, SW
Shelf	I,	II,	III			

Rules

Rule I,	No Shelf consist more than three type of article
Rule II,	B = C
Rule III,	P ≠ (BI or SN)
Rule IV,	S ≠ (BI or SN)
Rule V,	S = (I or II) Shelf

Question No 1

1st Step	Check Rule II	C is wrong
2nd Step	Check Rule III	B is wrong
3rd Step	Check Rule IV	A is wrong
4h Step	Check Rule V	E is wrong

So, Choice D is correct.

Question No 2

	Shelf 1	Shelf 2	Shelf 3	
As question	P	S		
As Rule III & IV, BI & SN = SH3	P	S	BI	SN

B & C≠ SH3 as Rule I& II

Check the choice,

Choice E is correct.

Question No 3

	Shelf 1	Shelf 2	Shelf 3	
As question	S	P		
As Rule III & IV, BI & SN = SH3	S	P	BI	SN

B & C≠ SH3 as Rule I& II

Then B and C cannot on shelf 3 as Rule I,

Check the choice,

Choice B is correct.

Question No 4

	Shelf 1			Shelf 2		Shelf 3	
As question	B	C	SW				
As Rule V	B	C	SW	S			
As Rule IV, BI& SN = SH3, so	B	C	SW	S		BI	SN
As Rule III, P≠ (BI/SN), so P =SH2	B	C	SW	S	P	BI	SN

Check the choice,

Choice E is correct.

Question No 5

	Shelf 1		Shelf 2			Shelf 3	
As question & Rule II.			R	B			
(A) wrong as B ≠ Sh1	B		R			SW	
(B)	BI		R	B	S		
As Rule V, BE = Sh1 or Sh2 while as Rule IV, (BE ≠ BI or S). So it is wrong							
(C)	BI		R	B		S	
As Rule V, BE = Sh2	BI		R	B	BE	S	
P ≠ Sh1& Sh3 as Rule III P ≠ Sh2 as Rule I So it is wrong							
(D)	S		R	B	SW		
Then BE ≠ Sh1 as Rule IV BE ≠ Sh2 as Rule I BE ≠ Sh3 as Rule V So it is wrong							
(E)	BE		R	B	P		
As Rule III, BI & S = Sh3	BE		R	B	P	S	BI
Then SW = D1	BE	SW	R	B	P	S	BI
So choice E is correct							

Question No 6 - 11

Painting P, Q, R, S, T, U, V, W, X
Space number 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Three group of different centuries
Group must be separate from each other
Green Color = 3 Painting
Blue Color = 2 painting
White Color = 4 painting

Rules

Rule I, Space not occur within painting
Rule II, $Q \neq U$
Rule III, S, T, U's Painting of same color, or S = T = U
Rule IV, Empty Space = 5
Rule V**,** P & V's Green Color,
Rule VI, W's Blue Color Painting

	White Color	Green Color	Blue Color
According to Rules Possible Painting	S, T, U	P, V	W

As Rule II, Q =Green or Blue
R & X = Green, Blue or White

Question No 6

	1	2	3	4	5	6	7	8	9	10	11	12
As question & Rule IV,				E	E							
Then Green Color painting must be on 1, 2, 3 space	Green			E	E							
Then next two spaces can be taken by Blue Color Painting or next four spaces Can be taken by White Color. So Option 1	Green			E	E	Blue		E		White	Color	
Option 2	Green	Cen		E	E	White	Color		E		Blue	C

Check the choice,
Choice C is correct.

Question No 7

Reverse order is, White Color first, Blue Color second and Green color third

	1	2	3	4	5	6	7	8	9	10	11	12
As Rule IV					E							
First White Color then,	White	Color		E								
Second Blue Color then	White	Color		E	Blue	C						
As Group must be separate from each other	White	Color		E	Blue	C	E					
Third Green color, then	White	Color		E	Blue	C	E	Green	Color		E	

Check the Choice,
Choice D is correct.

Question No 8

	1	2	3	4	5	6	7	8	9	10	11	12
as Rule IV					E							

Blue Color's Painting cannot hung on
first four spaces because if Blue Color's painting hung on first four spaces then all three empty space be used before Space 6 and then Green Color and White Color cannot be separate by empty space. So, Choice A is correct.

Question No 9

	1	2	3	4	5	6	7	8	9	10	11	12
As question and Rule IV					E						S	
Then as Rule III, 8 must be Empty space					E			E			S	

Then Space 9 can be taken by T, U, R or X
As possible painting of White Color.
Check the choice,
Choice D is correct.

Question No 10

	1	2	3	4	5	6	7	8	9	10	11	12
As Rule IV					E							
First White Color then,	White Color				E							
Option 1	White Color			E	Blue C		E	Green Color.				E
Option 2	White Color			E	Green		E	Blue C				E

Check the Choice,
Choice E is correct.
As 9th space is empty or occupy by Green color painting.

Question No 11

As P is Green Color painting, so Green Color comes first, and as W is Blue Color painting so Blue Color come second.

	1	2	3	4	5	6	7	8	9	10	11	12
As question and Rule IV												
Option 1	P	X	V	E	E	W	Q	E				
Option 2	E	P	X	V	E	W	Q	E				
As remaining												
Option 1	P	X	V	E	E	W	Q	E	S	T	U	R
Option 2	E	P	X	V	E	W	Q	E	S	T	U	R

Check the Choice,
Choice A is correct.

Question No 12 - 14

Pure N	Pure M	Pure O	Three Combinations of two of these M, N, O
Color Show	G	B	P
Green	Brown	Purple	
Pure M	Pure N	(M + N)	
(N + O)	Pure O	(M + O)	
	(M + N +O)		

Question No 12

Choice E, (M + N +O) is wrong because as above information there is only Pure liquid or combination of two of these liquid not combination of three liquid.

So, Choice E is correct answer.

Question No 13

No	Color	Liquid	Combination	Net Combination	Color
1st	Green	N	N + (M + N)	M + N	Purple
		(N + O)	N + (M + O)	M +N +O	Brown
2nd	Purple	(M + N)	(N + O) + (M + N)	M + N +O	Brown
		(M + O)	(N + O) + (M + O)	M +N +O	Brown

Check the Choice,

Choice E is correct.

Question No 14

No	Color	Liquid	Combination	Net Combination	Color
1st	Green	N	N + M	N + M	P
		(N + O)	N + O	N + O	G
			N + M+ N + O	M + N + O	B
2nd	Brown	M	(N + O) + M	M + N + O	B
		O	(N + O) + O	N + O	G
		M + N + O	(N + O) + M+ N + O	M + N + O	B

In above table, combination turn Green only when 1st liquid is N and 2nd liquid is O.

Or 1st liquid is combination of N and O, and 2nd liquid is O.

Check the choice,

So, Choice D is correct.

Question No 15 - 21

Boys F G H I J K L

Team 1 Team 2

Rules

Rule I, Team 1 must have three members and Team 2 must have four members

Rule II, $F \neq H$

Rule III, $G_1 \rightarrow I_1$

Rule IV, $J_1 \rightarrow H_2$

Rule V, K = 2

New Rule

As Rule IV, $J_1 \rightarrow H_2$, then F cannot be in team 2, as Rule II, so $J_1 \rightarrow H_2$

Question No 15

1st Step	Check Rule V	C is wrong
2nd Step	Check Rule II	B is wrong
3rd Step	Check Rule IV	E is wrong
4th Step	Check Rule III	A is wrong

So, Choice D is correct.

Question No 16

F $\rightarrow$ 2,

As New Rule, if $J_1 \rightarrow H_2$, but now F in Team 2, so J cannot be in team 1.

Then J $\rightarrow$ Team 2

Choice D is correct.

Question No 17

As New Rule $J_1 \rightarrow H_2$, then F must in team 1

So, Choice A is correct.

Question No 18

	Team 1		Team 2			
As question,	H	L				
As Rule II, F ≠ H, so F = 2	H	L	F			
As Rule IV, $J_1 \rightarrow H_2$, now H = 1,						
Then J ≠ 1, so	H	L	F	J		
As Rule V, K = 2	H	L	F	J	K	
As Rule III, $G_1 \rightarrow I_1$, G ≠ 1, because						
if G = 1, then Team 1 consist four member,						
which is wrong as Rule I, then G = 2	H	L	I	F	J	K G

Check the choices,

Choice B is correct.

Question No 19

	Team 1			Team 2			
As question and as Rule I,				K			
As Rule IV, H & J = 2, only possible							
Choice, so				K	H	J	
As Rule II,	F			K	H	J	
As Rule III, I ≠ 2, then remaining							
Option 1	F	G	I	K	H	J	L
Option 2	F	I	L	K	H	J	G

Check the choices, Choice B is correct.

Question No 20

	Team 1			Team 2			
Let I & L, in team 1, and as Rule V,	I	L		K			
As Rule II, F ≠ H, so							
Option 1	I	L	H	K	F		
Option 2	I	L	F	K	H		
Then remaining,	I	L	H/F	K	F/H	J	G
Now Let, I & L, in team 2 and as Rule I,				I	L	K	
As Rule II, F ≠ H, so	F/H			H/F	I	L	K
Then remaining	F/H	G	J	H/F	I	L	K

it is wrong as Rule III,
then only Option 1 & 2 possible, check the choices,
Choice D is correct.

Question No 21

	Team 1			Team 2			
As question and Rule I,	G			K			
As Rule III, $G_1 \rightarrow I_1$, so	G	I					
J ≠ 1, because if J = 1, then F and H							
Will be in same team which is wrong							
As Rule II, so J must be in team 2	G	I		K	J		
As Rule II, F ≠ H, then	G	I	H/F	K	J	F/H	
Remaining	G	I	H/F	K	J	F/H	L

Check the choices,
Choice E is correct.

Test No 6

Question No 1 - 5

Bulbs T, U, V, W, X, Y
8 Positions, Two will be Empty

Rules

Rule I, T =U ± 1
Rule II, X = Y ± 1
Rule III, W attached with Y one side and with empty position on other side
Or W = (Y ±1) and (E.P ± 1)

New Rule

As Rule II & III, X = Y ± 1 and W = Y ± 1
Then in sequence X Y W

Question No 1

	1	2	3	4	5	6	7	8
Let Empty = 1 & 8, then	E							E
As Rule III, W = E ± 1, W =7	E						W	E
As Rule III, W = Y ±1, Y = 6	E					Y	W	E
As Rule II, X = Y ± 1, X = 5	E				X	Y	W	E
Remaining can place as								
Rule I,								
Option 1	E	U	T	V	X	Y	W	E
Option 2	E	V	T	U	X	Y	W	E

Check the choice,
Choice A is correct.

Question No 2

V = X ± 1	1	2	3	4	5	6	7	8
Let Empty = 1 & 8, then	E							E
As Rule III, W = E ± 1, W =7	E						W	E
As Rule III, W = Y ±1, Y = 6	E					Y	W	E
As Rule II, X = Y ± 1, X = 5	E				X	Y	W	E
As question V = X ± 1, so	E			V	X	Y	W	E
Then remaining	E	U	T	V	X	Y	W	E

Check the choice,
Choice C is correct.

Question No 3

X = E ± 1	1	2	3	4	5	6	7	8
Let Empty = 8, then								E
As Rule III, W = E ± 1, W =7							W	E
As Rule III, W = Y ±1, Y = 6						Y	W	E
As Rule II, X = Y ± 1, X = 5					X	Y	W	E
As question X = E ± 1, E = 4				E	X	Y	W	E
Then remaining	U	T	V	E	X	Y	W	E

Check the choice,
Choice B is correct.

Question No 4

	Bulb can be
Total Bulbs	T, U, V, W, X, Y
As Rule III, W = Y ± 1, so both W & Y cannot be Adjacent to empty position on both side, then	T, U, V, X
As Rule II, X = Y ± 1, X cannot adjacent to empty Position on both side, Then	T, U, V
As Rule I, U = T ± 1, so both T & U cannot be adjacent To empty position on both side, Then	V

Only V can adjacent with empty position on both sides,
Choice **B** is correct.

Question No 5

	1	2	3	4	5	6	7	8
Let Empty = 8, then								E
As Rule III, W = E ± 1, W =7							W	E
As Rule III, W = Y ±1, Y = 6						Y	W	E
As Rule II, X = Y ± 1, X = 5					X	Y	W	E
Remaining can place as								
Option 1	E	T	U	V	X	Y	W	E
Option 2	E	V	U	T	X	Y	W	E
Option 3	E	U	T	V	X	Y	W	E

As above all three options, when signal transfer from T to Y, it must pass through X,
So X cannot be attach to empty position, otherwise signal cannot be transfer from T to Y.
Choice E is correct.

Question No 6 - 11

Colors PI, BR, T, G, PU, B

Rules

Rule I, At least three wire of three different colors
Rule II, $B \leq 2$
Rule III, $PU \leq 2$
Rule IV, There can be at most one wire of each of other color in a single color.
Rule V, $PI \rightarrow BR$
Rule VI, $T \neq G$

Question No 6

1st Step	Check Rule I	D, E is wrong
2nd Step	Check Rule VI	A is wrong
3rd Step	Check Rule V	C is wrong

So, Choice B is correct

Question No 7

Available colors PI, BR, T, G, PU, B

Color	As Rule	No of Wire
Black	II	2
Purple	III	2
Pink & Brown	V	2
Tan or Gray	VI	1 .
Max. Total No of wire		7

So, Choice B is correct.

Question No 8

Color	As Rule	No of Wire
Black	as question	1
Purple	as question	1
Pink & Brown	V	2
Tan or Gray	VI	1 .
Max. No of wire		5

Check the choice,
Choice A is correct.

Question No 9

PU = 1 & T = 1

Choice	Choice Colors	Total Colors
A	B + PU	B + 2PU + T
B	BR + PU	BR + 2PU+T
C	BR + B	BR + B + PU + T
D	PI + BR	PI + BR + PU+ T
E	PI + B	PI + B + PU + T

Now check each Rule one be one

Rule I	No Choice is wrong
Rule II	No Choice is wrong
Rule III	No Choice is wrong
Rule IV	Choice E is wrong

So, Choice E is correct

Question No 12 – 14

First Semester Second Semester
At the end of Second Semester
$F \geq 3$ $M \geq 1$ $S \geq 1$
Area Finance F102, F201, F202, F203
Area Marketing M101, M102, M103, M201
Area Social Science S101, S102, S202

Rules

Rule I, per semester F, M, S < 3
Rule II, 200's course only for Second Course
Rule III, No course repeat in the two semesters

Question No 12

As Rule I and as condition $F \geq 3$, it clear that Area F must include in First Semester
As Rule II, only F102 can select for First Semester.
So, Choice A is correct.

Question No 13

Choice	Explanation
A	wrong as first question F102 must include in First semester
B	wrong as first question F102 must include in First semester
C	yes it can be
D	if M = 3 then $F \geq 3$ and $S \geq 1$ cannot be fulfils, so it is wrong
E	if M = 3 and S = 1 then F = 3 in First Semester which cannot be possible as first question restriction.

Question No 14

	First Semester			Second Semester		
	1	2	3	1	2	3
As question	M101	M102				
As first question restriction	M101	M102	F102			
Then remaining as $F \geq 3$ and $S \geq 1$						
Then	M101	M102	F102	F	F	S

Check the choice,
Choice E is correct.

Question No 15 - 21

Articles Types F I.T M B S

Journal publish three time a year contain exactly three article

Rules

Rule I, at least one article of each type must be published each year

Rule II, M = Fall

Rule III, I.T ≠ M

Rule IV, S ≠ S ± 1

Rule V, at least two issue contain finance article

New Rule

As Rule II & III, M = Fall and M ≠ I.T, then I.T ≠ Fall

Question No 15

Winter Step	Check Rule II	A is wrong
Spring Step	Check Rule IV	B is wrong
Fall Step	Check Rule V	E is wrong
4th Step	Check Rule III	C is wrong

So, Choice D is correct.

Question No 16

	Winter Issue	Spring Issue	Fall Issue
As question and Rule II,		S	M
As Rule IV, S ≠ S ± 1, so S ≠ 1, 3			
As Rule III, I.T ≠ M, so I.T ≠ Fall			
Then remaining		S	M, F, B

So, Choice B is correct.

Question No 17

	Article can be
	F, I.T, M, B, S
As Rule III, M ≠ I.T, so I.T & M cannot publish	
Three times a year, so	F, B, S
As Rule IV, S = S ± 1, so S cannot be, then	F, B

So, Choice C is correct.

Question No 18

	Winter Issue	Spring Issue	Fall Issue
As question and Rule II,	M		M
As Rule III, I.T ≠ M, then as Rule I,	M	I.T	M

Check the choices,

Choice A, D, E is wrong

Choice B is wrong as Rule III,

So, Choice C is correct.

Question No 19

As Rule IV, S ≠ S ± 1, now survey publish in two issue then it only possible as S = Winter and Fall Issues, So Choice E is correct.

Question No 20

As Rule III, I.T ≠ M, any one of I.T & M can publish twice a year but not both

So, Choice B is correct.

Question No 21

	Winter Issue	Spring Issue	Fall Issue
As question and Rule II,		S, S, S	M
Then as Rule V,	F,	S, S, S	M, F
As Rule III, I.T ≠ M, then I.T = Winter	F, I.T	S, S, S	M, F
Then remaining	F, I.T, B	S, S, S	M, F, B

Check the choices, Choice B is correct.

Test No 7

Question No 1 - 4

Positively	I	K	L	M
Negatively	S	T	U	

Rules

Rule I, At least one must be select from each group
Rule II, $I \neq T$
Rule III, $L = M$
Rule IV, $K = U$

Question No 1

1st Step	Check Rule II	B is wrong
2nd Step	Check Rule III	D, E is wrong
3rd Step	Check Rule I	A is wrong

So, Choice C is correct.

Question No 2

If I is selected then as Rule III, L = M, L & M both cannot select as Rule I,
And then K must be select.
K is selected than U must be select as Rule IV.
So, Choice E is correct.

Question No 3

Take each choice,	Possible Group	True or wrong
(A) I & L	I, L, M as Rule III	wrong as Rule I.
(B) I & S	I, S, K or I, S, U	wrong as Rule IV.
(C) K & L	K, L, M as Rule III,	wrong as Rule I.
(D) M & S.	M, S, L as Rule III	yes.
(E) M & U	M, L, U as Rule III	wrong as Rule IV.

So, Choice D is correct.

Question No 4

Only four possible groups can make,	Group
If I is selected then	I, K, U
If L or M is selected then	L, M, T
Or	L, M, S
If K is selected then	K, U, S
Or	K, U, I
Or	K, U, T

Check the choice,
Choice E is correct.

Question No 5 - 10

Nurse G, H, I, K, L, M

Shift 1	Shift 2	Shift 3
Emergency training completed		I, L, M
Emergency training not completed		G, H, K
Three year Experience		G, H, I
No Job Experience		K, L, M

Rules

Rule I, at least one from Emergency Training Completed

Rule II, at least one from three year experience

Rule III, G → (Shift 1 or Shift 2)

New Rule

As above information "K" is only one who has no job experience and no emergency training program, and "I" is only one who has both job experience and emergency training program. The conditions of Rule I & Rule II, only fulfill if both K & I in same Shift.

Question No 5

1st Step	Check New Rule	A, B, D is wrong
2nd Step	Check Rule I	E is wrong

So, Choice C is correct.

Question No 6

Choice D is correct as New Rule

Question No 7

	Remaining Nurses
	G, H, I, K, L
As New Rule, I & K cannot be partner of M, so	G, H, L
As Rule I, L cannot be partner of M, so	G, H

Check the Choice,

Choice D is correct.

Question No 8

	Shift 1	Shift 2	Shift 3
As question		H	
As Rule III & Rule II, G must be			
In Shift 1,	G	H	
Then as New Rule, I & K = 3	G	H	I, K

Check the Choice,

Choice B is correct.

Question No 9

Choice		Possible arrangement					
		Shift 1		Shift 2		Shift 3	
A	as Choice	H				M	
	As New Rule	H		I	K	M	
	As Rule III, G = 1	H	G	I	K	M	
	As remaining	H	G	I	K	M	L

The above arrangement is wrong as Rule I, so Choice A is correct.

Question No 10

	Shift 1		Shift 2		Shift 3	
As question					L	
Then as New Rule and Rule III,						
Option 1	I	K	G		L	
Option 2	G		I	K	L	
Remaining M & H as Rule I						
Option 1	I	K	G	M	L	H
Option 2	G	M	I	K	L	H

Check the Choice,
Choice E is correct.

Question No 11 - 13

Material G H I K L

Solid materials come first in sequence

Rules

Rule I, G is more solid then H, then on positioning G < H

Rule II, I is more solid then K, then on positioning I < K

Rule III, H is softer then L, then on positioning L < H

Question No 11

1st Step	Check Rule I	D is wrong
2nd Step	Check Rule II	B, E is wrong
3rd Step	Check Rule III	C is wrong

So, Choice A is correct.

Question No 12

As question	H < K
As Rule I, G < H, then	G < H < K
As Rule III, L < H, then	G, L < H < K

Check the choices,

Choice E is correct.

Question No 13

As question	K < L
As Rule III, L < H then	K < L < H
As Rule II, I < K, then	I < K < L < H

Check the choices,

Choice E is correct.

Question No 14 - 20

Person	R	S	T	U	V	W	X

Rules

Rule I, X = 1, n (n = last number)
Rule II, R = V ± 1
Rule III, S ≠ U
Rule IV, W ≠ R ± 1
Rule V, Side 1cannot begin with U
Rule VI, Each Side must have at least two selections
Rule VII, Each selection must appear on the record exactly one time.

Question No 14

As Rule III, S ≠ U, so S must be one Side 1
Choice B is correct.

Question No 15

	Side 1			Side2
As question,	W			
As Rule III, S ≠ U, so one of S & U join Side 1,	W	S/U		U/S
As Rule II, R = V ± 1, so both R & V cannot Select because side 1 has only three persons	W	S/U	U/S,	R, V
Remaining	W	S/U	X/T	U/S, R, V, T/X

Check the choices,
Choice D is correct.

Question No 16

1st Step	Check Rule I	C, D is wrong
2nd Step	Check Rule II	E is wrong
3rd Step	Check Rule III	B is wrong

So, Choice A is correct.

Question No 17

1st Step	Check Rule I	A is wrong
2nd Step	Check Rule II	E is wrong
3rd Step	Check Rule IV	B, C is wrong

So, Choice D is correct.

Question No 18

	Side 1			Side2			
As question,				V			U
As Rule II, R = V ± 1, so				V	R		U
As Rule III, U ≠ S, so	S			V	R		U
As Rule IV, W ≠ R ± 1, so W ≠ Side 2	S	W		V	R		U
Remaining as Rule I,	X/S	W	S/X	V	R	T	U

Check the choices,
Choice C is correct.

Question No 19

	Side 1	Side2
As question,	W, R, X	
As Rule II, R = V ± 1, so	W, V, R, X	
As Rule III, S ≠ U so	W, V, R, S/U, X	U/S
Remaining as Rule VI	W, V, R, S/U, X	U/S, T

Check the choices,
Choice E is correct.

Question No 20

	Side 1			Side2			
As question,	S	T	X	V			
As Rule II, R = V ± 1, so				V	R		
As Rule III, S ≠ U so	S	T	X	V	R	U	
Remaining as question,	S	T	X	V	R	U	W

Check the choices,
Choice E is correct.

Test No 8

Question No 1 - 4

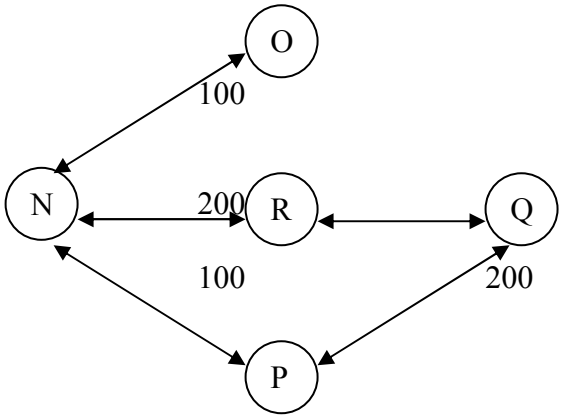
Cities N O P Q R

N → (O, P, R) P → Q Q → R

Maximum distance can travel without night stay = 300 Miles

Overnight stop must make in city.

Draw the following diagram according to the Rules, and then give the answer by looking the diagram.



Question No 1

Choice	Routes	Distance	Night Stay
A	N → R → Q	200 + 300	Yes
B	R → Q → P	300 + 200	Yes
C	Q → R → N	300 + 200	Yes
D	N → P → Q	100 + 200	No
E	Q → P → N → O	200 + 100 + 100	Yes

So, Choice D is correct.

Question No 2

Route O → N → R → Q

Distance 100 + 200 + 300

Only one night stay at R

So, Choice A is correct.

Question No 3

Choice	Routes	Distance	Night Stay
A	P → N → P	100 + 100	No
B	P → O → P	200 + 200	Yes
C	P → Q → P	300 + 200	Yes
D	Choice A and B both	(N + Y)	Yes
E	Choice A and C both	(N + Y)	Yes

So, Choice A is correct.

Question No 4

Option	Routes	Distance
1	O → N → P → Q	100 + 100 + 200
2	O → N → R → Q	100 + 200 + 300

Check the choices

Choice B is correct answer.

Question No 5 - 10

Adult R S T U V

In one round, exactly three adult play

Rules

Rule I, No adult can play three consecutive rounds

Rule II, No adult can sit out two consecutive rounds

Rule III, In any, each of five adult must play in exactly three rounds

Question No 5

	Adult Play			Adult sits out	
As question, First round	R	S	T	U	V
Second Round, as Rule II,	V	U			

V & U must play in second round

Check the Choice,

Choice E is correct.

Question No 6

	Round	Adult Play			Adult sits out	
	1st	S	T	U	V	R
As Step 1 & 2	2nd	V	R		U	
	3rd	R	T	U	V	S

Step 1, as Rule II, V & R must play in second round.

Step 2, as Rule I, U cannot play in second round

Check the Choice,

Choice C is correct.

Question No 7

Make the possible rounds according to the Rules and question

Round	Adult Play			Adult sits out	
1st	R	S	U	T	V
2nd	T	V	S	U	R
3rd	U	R	V	S	T
4th	S	T	U	R	V
5th	R	V	T	U	S

In above possible arrangement, all the Rules have been followed.

Check the Choice,

Choice D is correct.

Question No 8

	Round	Adult Play			Adult sits out	
	1st	R	T	U	V	S
	2nd	S	U	V	R	T
As Step1 & 2	3rd	R	T		U	
As Step 3,	4th	U				

Step 1, R & T, must play 3rd round as Rule II.

Step 2, U cannot play 3rd round as Rule I.

Step 3, U must play 4th round as Rule II.

Choice D is correct.

Question No 9

	Round	Adult Play			Adult sits out	
	1st	R	U	V	S	T
As Step1,	2nd	S	T			
As Step 2 & 3,	3rd	R	T		S	
	4th	S	U	V	R	T

Step 1, S & T must play 2nd round as Rule II.
Step 2, R & T must play 3rd round as Rule II.
Step 3, S cannot play 3rd round as Rule I.
Check the Choice,
Choice B is correct.

Question No 10

	Round	Adult Play			Adult sits out	
	1st	R	S	U	V	T
As Step 1,	2nd	V	T		U	
	3rd	S	U	V	R	T
As Step 3 & 4	4th	R	T		V	
As Step 5,	5th	V				

Step 1, V & T must play second round as Rule II.
Step 2, U cannot play second round as Rule I.
Step 3, V cannot play third round as Rule I.
Step 4, R & T, must play 4th round as Rule II.
Step 5, V must play fifth round as Rule II.
Choice E is correct,

Question No 11 - 13

Three Classes	10am		2pm		6pm			
Numbering	1		2		3			
Learners	F	G	H	I	J	K	L	M

Each Class consist two or three learner

Rules

Rule I, F must be shared class with exactly one other learner.
Rule II, G = L
Rule III, H ≠ K
Rule IV, I = 1/3
Rule V, K < J

Question No 11

1st Step	Check Rule I	D is wrong
2nd Step	Check Rule II	A is wrong
3rd Step	Check Rule III	E is wrong
4th Step	Check Rule V	B is wrong

So, Choice C is correct.

Question No 12

	10am			2pm			6pm
As question							H, F
As Rule I, H & F is complete group							
Then as Rule IV, I = 1	I						H, F
As Rule V, K < J,							
then K = 1,so	I	K		J			H, F
As Rule II, G =L, then	I	K		J	G	L	H, F
Remaining	I	K	M	J	G	L	H,F

Check the choices,
Choice E is correct.

Question No 13

	10am		2pm			6pm
As question	F	M				
As Rule I, H & F is complete group						
As Rule IV, I = 1/3,						
then I = 3	F	M				I
As Rule V, K < J then	F	M	K			I, J
As Rule II, G = L, then	F	M	K	G	L	I, J
Remaining	F	M	K	G	L	I, J,H

Check the choices,
Choice C is correct.

Question No 14 - 19

Groups	R	S	T	U	V
Four Night	Mon	Tue	Wed	Thur	
Numbering	1	2	3	4	

Rules

Rule I, at most 2 groups can view the comet on any given night
Rule II, $R \neq T$
Rule III, $S < V$
Rule IV, $U = V$

New Rule

As Rule III & IV, $S < V$ and $U = V$ then $S < V = U$

Question No 14

1st Step	Check Rule I	B is wrong
2nd Step	Check Rule II	C is wrong
3rd Step	Check Rule III	D is wrong
4th Step	Check Rule IV	E is wrong

So, Choice A is correct.

Question No 15

As question $S = 3$ then as New Rule, $S < V = U$, then $U = V = 4$
So, Choice D is correct.

Question No 16

Then $U = 1, 2$ and as Rule IV, $U = V = 1, 2$
U & $V \neq 1$, as New Rule, U & $V = 2$ and then $S = 1$
So, Choice B is correct.

Question No 17

As question and Rule IV, U and V must view on Monday or Tuesday.
As Rule III, $S < V$, so U and V cannot view on Mon then V must view on Monday and then U and V must view on Tuesday
Check the choices.
Choice B is correct.

Question No 18

	1	2	3	4
As question				T

$R \neq 4$, as Rule II,
U & $V \neq 4$ as Rule IV,
$S \neq 4, 3$ as Rule III, $S < V$
Now check the choices,
Choice B, C, D, E is wrong as above explanations, so Choice A is correct.

Question No 19

Take each choice and put the groups on day according to the Rules

Choice	True/False	1	2	3	4
A	True	S	U V	R	T
B	True	R S	U V	T	
C	True	T	R S	U V	
D	True	R	T S	U V	
E	False				T, V,U

Choice E is wrong as Rule I,
So, Choice E is correct answer.

Question No 20

	1	2	3		4
As question and Rule III & IV,					
One of group R, S, T must view					
on Monday	R	S			T
Remaining as Rule IV,	R	S	U	V	T
Check the choices,					
Choice A is correct.					

Test No 9

Question No 1 - 5

Player	F, G, H, I, J, K, L				
Days	Mon	Tues	Wed	Thur	Fri
Days numbering	1	2	3	4	5

Rules

Rule I, each player must be scheduled exactly one day

Rule II, Exactly two lessons consist two player each, and these two lesson not on consecutive days.

Rule III, F < G

Rule IV, H → not assign with any other player

Rule V, I = J -1

Question No 1

1st Step	Check Rule IV	C is wrong
2nd Step	Check Rule III	B is wrong
3rd Step	Check Rule V	A, E is wrong

So, Choice D is correct.

Question No 2

	Mon	Tues	Wed	Thur	Fri
As question			H		
As Rule V, I = J – 1, so there are two options					
Option 1	I	J	H		
Option 2			H	I	J

Check the Choice,

Choice B is correct.

Question No 3

As question F & I, will receive combine lesson.

They cannot take lesson on Fri as Rule V, I = J -1, so I ≠ 5

Let they take lesson on Thursday.	Mon	Tues	Wed	Thur	Fri
				F, I	
Then as Rule V & Rule III,				F, I	G, J

It is wrong as Rule II, so F & I cannot take lesson on Thursday.

Then they can take lesson on Wednesday, Choice C is correct.

Question No 4

G & J will receive combine lesson, that lesson will on Wednesday, as similarly as in above 3rd question conditions.

	Mon	Tues	Wed	Thur	Fri
So,			G, J		
Then as Rule II,			G, J		K, L
As Rule V		I	G, J		K, L
As Rule III, F < G, so F = 1	F	I	G, J		K, l
As remaining	F	I	G, J	H	K, l

Check the choice,

Choice D is correct.

Question No 5

	Mon	Tues	Wed	Thur	Fri
As question, and Rule V, I = 4 and J = 5				I	J
Then as Rule II,	Joint		Joint	I	J
As Rule IV,	Joint	H	Joint	I	J
As Rule III, F < G, so F = 1and G = 3	(F, _)	H	(G, _)	I	J
As remaining	F, L/K	H	G, K/L	I	J

Check the Choice,
Choice A is correct.

Question No 6 - 11

Candidates L M N O P Q

Exam Control Committee (ECC) Administration Committee (AC)

Rules

Rule I, Each committee have exactly three members

Rule II, Both committee have at least one member in common

Rule III, $L \neq O$

Rule IV, $O \rightarrow P$

Question No 6

1st Step Check Rule III A, B is wrong

2nd Step Check Rule IV C, E is wrong

So, Choice D is correct.

Question No 7

1st Step Check Rule III C is wrong

2nd Step Check Rule IV B, D is wrong

3rd Step Check Rule II A is wrong

So, Choice E is correct.

Question No 8

As question, there is maximum member are in common, so all three will be member of AC, check the choice,

Choice B is correct.

Question No 9

	ECC			AC		
As question	L	M	N	N	P	Q
As Rule IV, O must join AC, so O can place with N or Q, so				N	P	Q
As N is common in both committee, so N cannot replace with O, and then O must replace with Q,	L	M	N	N	P	O

Check the choice,

Choice E is correct.

Question No 10

	ECC			AC		
As question and Rule III,	Q	O		Q	L	
As Rule IV, $O \rightarrow P$, so	Q	O	P	Q	L	
As remaining	Q	O	P	Q	L	M/N

Check the choice,

Choice D is correct.

Question No 11

	ECC			AC		
As question	O	Q		L		
As Rule IV, $O \rightarrow P$, so	O	Q	P	L		

As Rule II, one member must be common

And as Rule III, O cannot be in common,

Then P or Q must in common or Both P and Q must be common.

Check the each choice,

Choice B, C, D, E can be true as it contain P or Q

Choice A is wrong as it does not contain P or Q So, Choice A is correct.

Question No 12 - 14

Workers	F	M	H	I	J		
Male Worker	F	H	J		Female Workers	M	I

Rules

Rule I, three machine, each machine has two single bed
Rule II, worker sharing machine must be same sex
Rule III, worker with skills M, cannot be share machine with any one who has poor performance
Rule IV, F has poor performance
Rule V, M & H are poor performance

Question No 12

	Machine 1		Machine 2	Machine 3	
As question,	F	H			
Then J will be alone as Rule II,	F	H	J		
Remaining as Rule II,	F	H	J	M	I

Check the choices,
Choice B is correct.

Question No 13

The new worker must be male in order to manage machine under Rule II,
So, Choice A is correct.

Question No 14

	Worker can share with Z
As other worker	F, M, H, I, J
As Rule VI and second question Rule, M & I cannot share machine with Z, so	F, H, J
As Rule III & IV, $Z \neq F$, so	H, J
As Rule III & I, $H \neq Z$, so	J

So, Choice E is correct.

Question No 15 - 21

Families	R	S	T	U	V	W
Flats	1	2	3	4	5	6

Rules

Rule I, $R < S$
Rule II, $T = W \pm 1$
Rule III, $U \neq W \pm 1$
Rule IV, $V = 4$

Question No 15

1st Step	Check Rule IV	E is wrong
2nd Step	Check Rule I	B is wrong
3rd Step	Check Rule II	A is wrong
4th Step	Check Rule III	D is wrong

So, Choice C is correct.

Question No 16

	1	2	3	4	5	6
As question and Rule IV,				V	S	
As Rule II, T & W ≠ 6, so						
Option 1	T	W		V	S	
Option 2		W	T	V	S	
Remaining as Rule I,						
Option 1	T	W	R	V	S	U
Option 2	R	W	T	V	S	U

Check the choices,
Choice D is correct.

Question No 17

	1	2	3	4	5	6
As question and Rule IV,		W		V		
As Rule II, T = W ± 1, so						
Option 1	T	W		V		
Option 2		W	T	V		
As Rule III, U ≠ 1 or 3, then U = 5, 6						
Option 1	T	W		V	U	
Option 2		W	T	V		U
Remaining as Rule I, R < S						
Option 1	T	W	R	V	U	S
Option 2	R	W	T	V	S	U

Check the choices,
Choice B is correct answer.

Question No 18

	1	2	3	4	5	6
As question and Rule IV,			U	V		
As Rule II, T = W ± 1, so they can be 1 & 2						
Or 5 & 6, so						
Option 1	W	T	U	V		
Option 2			U	V	T	W

Remaining as Rule I, R < S

Option 1	W	T	U	V	R	S
Option 2	R	S	U	V	T	W

Check the choices,
Choice A is correct.

Question No 19

	1	2	3	4	5	6
As Rule IV, V = 4, so				V		

As Rule II, T = W ± 1, they can be in
Following different options

Option 1	W	T		V		
Option 2		W	T	V		
Option 3				V	W	T

As Rule I, R < S, then

Option 1	W	T	R	V	S	
Option 2	R	W	T	V		S
Option 3	R	S		V	W	T

Remaining

Option 1	U	T	W	V	R	S
Option 2	R	W	T	V	S	U
Option 3	R	S	U	V	W	T

Now check the choices,
Choice C is correct.

Question No 20

	1	2	3	4	5	6
As question and Rule IV,				V	R	
As Rule I,				V	R	S

As Rule II, T = W ± 1, so

Option 1	W	T		V	R	S
Option 2		T	W	V	R	S

Remaining

Option 1	W	T	U	V	R	S
Option 2	U	T	W	V	R	S

Check the choices,
Choice A is correct.

Question No 21

As question R = T ± 1 and as Rule II, T = W ± 1, then R, T and W are in consecutive order
And then they must be before V

	1	2	3	4	5	6
As explanation	R/W	T	W/R	V		
Remaining	R/W	T	W/R	V	U/S	S/U

Check the choices,
Choice E is correct.

Test No 10

Question No 1 - 5

Girl	L	M	N	O
Boy	V	W	X	Y

Rules

Rule I, same sex adult not sit with each other
Rule II Adult seated at foot and head must be opposite sex
Rule III $X \neq N$
Rule IV $Y \neq O$

New Rule

By Rule I, it is cleat that if female seated on Side then other two adult will be male and Vice Versa.

Question No 1

	H	F	First Side			Second Side		
			1	2	3	1	2	3
As question	Y			N				
As Rule II & III, X must sit on Second side	Y			N			X	
Remaining two male will be seated with N,	Y		V	N	W		X	

Check the choice,
Choice E is correct.

Question No 2

If O is seated on Head then as Rule II, Boy will seated on Foot, so V, W, X, Y can sit at foot seat, check the choice,
Choice A is correct, as M is not Boy

Question No 3

	H	F	First Side			Second Side		
			1	2	3	1	2	3
As question		W			N	Y		
As Rule II, X cannot sit at head seat As Rule III, $X \neq N$, so X must sit With M		W			N	Y		X

Check the choice,
Choice C is correct.

Question No 4

	M	F	First Side			Second Side		
			1	2	3	1	2	3
As question	X			V			N	
Remaining Boy will seated on the Same side of N, as Rule I & II,	X			V		W	N	Y
Then reaming girl	X	L/M/O	L/M/O	V	L/M/O	W	N	Y

Check the Choice,
Choice A is correct.

Question No 5

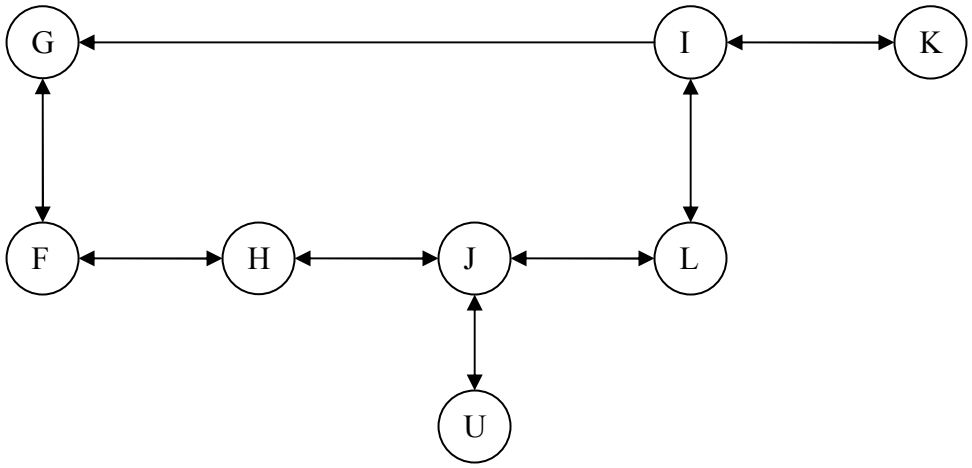
	H	F	First Side			Second Side		
			1	2	3	1	2	3
As question		X		Y			N	
As Rule IV, Y ≠ O, O cannot sit on First side.								
As Rule I, O cannot sit on Second Side								
Then O must sit on Head	O	X		Y			N	
Choice C is correct.								

Question No 6 - 11

Two Way Road F ⇔ G & H H ⇔ J L ⇔ I
J ⇔ L & U I ⇔ K
One Way Road I ⇒ G

Rule I, None of road intersect with each other except at city
Rule II, No other road in city
Rule III, Bicycle also follow same Rule as other traffic.

Draw the following diagram according to the Rules, and then give the answer by looking the diagram.



Question No 6

As in diagram the required route is K → I → G,
So Choice B is correct.

Question No 7

As question requirement, then the route from U to F will be as
U →J →L →I →G →F
Check the choices,
Choice C is correct.

Question No 8

G →K cannot travel because between I and G, it is one way road.
So, Choice B is correct.

Question No 9

Then from I, one can travel to all cities through one way road between I and G.
So, Choice E is correct.

Question No 10

Then Road should be constructed between H to U or F to U
Check the choices,
Choice A is correct.

Question No 11

The new road will be J to I and then there is no need to go at L, when travel from U to K
So, Choice D is correct.

Question No 12 - 15

Women F, G, H, I, J, K, L
Group Member → 2, 3, 4
Rules
Rule I F ≠ I
Rule II J = (I/L) J ≠ (I & L)
Rule III L → 3 member group

Question No 12

1st Step Check Rule I A is wrong
2nd Step Check Rule II B, D, E is wrong
So, Choice C is correct.

Question No 13

	Group 1			Group 2		Group 3	
As question	H	J	L	I			
Then remaining groups must be of two member each.							
As Rule I, F ≠ I, F = 3	H	J	L	I		F	
Then remaining K & G can join							
Group 2 or 3, so	H	J	L	I	G/K	F	K/G
Check the choice							
Choice D is correct.							

Question No 14

	Group 1				Group 2		
	1	2	3	4	1	2	3
As question & Rule III,					L	K	
As Rule II, I ≠ Group 2, so	I				L	K	
As Rule I, F =Group 2	I				L	K	F
Then remaining	I	J	H	G	L	K	F
Check the choice,							
Choice A is correct.							

Question No 15

	Group 1			Remaining		Women	
As Question	G	H	L	F	I	J	K
As Rule I, F & I cannot be in one Group and they cannot join group 1, As Rule III, remaining will make Another two group each two Member, So							
	Group 1			Group 2		Group 3	
Then	G	H	L	F		I	
As Rule II, J = Group 3	G	H	L	F		I	J
Remaining K = Group 2	G	H	L	F	K	I	J
Check the choice,							
Choice B is correct.							

Question No 16 - 22

Sculptures	F	G	O	I	J	K	L	O

Rules

Rule	F/O must be select or both
Rule	if F select then F = 1
Rule	J/K = 3
Rule	L $\rightarrow$ H and L = H ± 1

Question No 16

1st Step	Check Rule III	A, E is wrong
2nd Step	Check Rule II	D is wrong
3rd Step	Check Rule IV	B is wrong

So, Choice C is correct.

Question No 17

	1	2	3	4	5
As question,	K				
As Rule III, J/K = 3, now K= 1 then J = 3,	K		J		
As K = 1, so F cannot be select as Rule II,					
Then O must be select as Rule I, so	K	O	J		

Check the choices,
Choice B is correct.

Question No 18

	1	2	3	4	5
As question,					L
As Rule IV, L = H ± 1, so				H	L
As Rule III, J/K = 3			J/K	H	L

Check each choice according to the above sequence,
Choices A, B, , D is wrong, these choices are not according to the above sequence.
Choice C is wrong as Rule I.
So, Choice E is correct.

Question No 19

	1	2	3	4	5
As question				O	

Then as Rule IV, L = H ± 1, so L ≠ 5
So, Choice E is correct.

Question No 20

	1	2	3	4	5
As question and as Rule III,		L	J/K		
Then as Rule IV, L = H ± 1, then H = 1	H	L	J/K		
As H = 1, then F cannot be select as Rule II,					
Then O must be select as Rule I,	H	L	J/K	O	

So, Choice E is correct.

Question No 21

As H not select then L cannot be select as Rule IV, so, Choice A, B, D, E is wrong

So, Choice C is correct.

Question No 22

	1	2	3	4	5
As question and Rule III,					
Option 1	J/K	I	K/J		
Option 2			K/J	I	J/K

As J/K = 1 then F cannot be select as

Check each choice,

Choice B is correct.

Test No 11

Question No 1 - 5

Ten Fabrics 1 G 2 B 3 T 4 O

Rules

Rule I, T = 1 & 10
Rule II, B = B ± 1
Rule III, O ≠ B ± 1
Rule IV, T ≠ G ± 1

Question No 1

	1	2	3	4	5	6	7	8	9	10
as question		T	O	O						
As Rule I, T = 1 & 10, so	T	T	O	O						T
As Rule III, O ≠ B, then G = 7 in order to Separate the O and B, so	T	T	O	O	O	O	G	B	B	T

So, Choice C is correct.

Question No 2

	1	2	3	4	5	6	7	8	9	10
As Rule I,	T									T
As question, there are three options										
Option 1	T	T	B	B	G	O	O	O	O	T
Option 2	T	O	O	O	O	G	B	B	T	T
Option 3	T	T	O	O	O	O	G	B	B	T

Check the position of G and B

Option 1 G = 5 and B = 3, 4
Option 2 G = 6 and B = 7, 8
Option 3 G = 7 and B = 8, 9

Check the choice,

Choice E is correct.

Question No 3

Take each choice and try to complete the sequence, if sequence does not complete, that will be the correct choice.

Choice A	1	2	3	4	5	6	7	8	9	10
As choice		T	O	G						
As Rule I,	T	T	O	G						T
Then remaining	T	T	O	G	O	O	O	B	B	T

It is wrong because Rule III cannot be fulfilling, So Choice A is correct.

Question No 4

	1	2	3	4	5	6	7	8	9	10
As question			T	B						
As Rule I,	T		T	B						T
As Rule II,	T		T	B	B					T
As Rule III, O ≠ B ± 1, so G must be at 6 in Order to separate the O and B	T	O	T	B	B	G	O	O	O	T

So, Choice C is correct.

Question No 5

	1	2	3	4	5	6	7	8	9	10
As question & Rule I,	T			B	G					T
As Rule II,	T		B	B	G					T
As Rule III, O ≠ 2, then T = 2	T	T	B	B	G					T
As remaining,	T	T	B	B	G	O	O	O	O	T

Check the choice,
Choice B is correct.

Question No 6 - 11

Van 1	Van 2	Van 3	
Women	V, S	Girls	F, G, H, I, J, T

Rules

Rule I,	No more then three person in a Van
Rule II,	V = 1
Rule III,	V ≠ I
Rule IV,	S ≠ J
Rule V,	F = H = G

New Rule

As Rule I & II, V = 1 & V ≠ I, so I ≠ 1

Question No 6

As New Rule, I ≠ 1
Choice D is correct.

Question No 7

	Van 1			Van 2			Van 3	
As question				F				
As Rule V, F = H= G , so				F	H	G		
As Rule II, V = 1, so	V			F	H	G		
As Rule III, V ≠ I, then I ≠ 1 & 2, then I = Van 3	V			F	H	G	I	
Remaining as Rule IV, S ≠ J, so	V	J/S	T	F	H	G	I	S/J

Check the choices,
Choice B is correct.

Question No 8

	Van 1			Van 2			Van 3	
As question & Rule II, V = 1, so	V	S						
As Rule V, F = H = G	V	S		F	H	G		
As remaining	V	S,	T	F	H	G	I	J

Check the choices,
Choice D is correct.

Question No 9

	Van 1			Van 2		Van 3		
As question,				S				
As Rule II, V = 1	V			S				
Then as Rule V, F = H =G = 3	V			S		F	H	G
As Rule IV, S ≠ J, then J = Van 1	V	J		S		F	H	G
As remaining	V	J	T	S	I	F	H	G

Check the choices,
Choice D is correct.

Question No 10

	Van 1			Van 2		Van 3		
As question and Rule II, V = 1,	V			S		G		
As Rule V, F = H = G, so	V			S		G	H	F
As Rule III, V ≠ I, so I = 2	V			S	I	G	H	F
As Rule IV, S ≠ J, so J = 1	V		J	S	I	G	H	F
As remaining								
Option 1	V	T	J	S	I	G	H	F
Option 2	V		J	S, T	I	G	H	F

So, Choice E is correct.

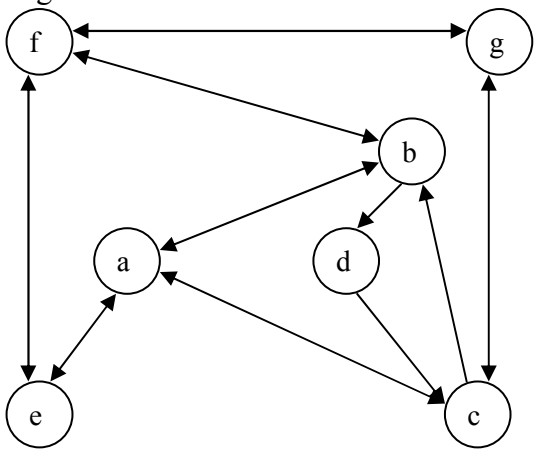
Question No 11

	Van 1			Van 2		Van 3		
As question and Rule II, V = 1,	V	T						
As Rule V, F = H = G → Van 3	V	T				F	H	G
As Rule III, V ≠ I, then I = 2	V	T		I		F	H	G
Remaining as Rule IV, S ≠ J	V	T	S/J	I	J/S	F	H	G

Check the choices,
Choice C is correct.

Question No 12 - 15

Two Way a ↔ (b, c, e), b ↔ f c ↔ g
e ↔ f f ↔ g
One Way b → d c → b d → c
Object passes through fewest points.
H = c G.S = a G = e B = d
T.C = b D = f S.M = g
Draw the following diagram according to the Rules, and then give the answer by looking the diagram.



Question No 12

G.S → S.M or a → g
Shortest Route a → c → g
So, Choice B is correct.

Question No 13

H → G.S → B or c → a, d
Shortest Route c → a → b → d
Two intermediate a and b
So, Choice A is correct.

Question No 14

G → G.S/B → S.M or e → a, d → g
Shortest Route e → a → c → g
Intermediates a and c
So Choice B is correct.

Question No 15

S.M → B and D or g → d & f
Shortest Route
Option 1 g → c → b → d → c → b → f
Option 2 g → f → b → d → c → b → f
First two Intermediates c and b or f and b
Check the choices,
Choice D is correct.

Question No 16 - 19

Job 1, 2, 3, 4, 5, 6

Time required for each Job is One month

Rules

Rule I, J1 & J2 must be completed first

Rule II, J3 < J4

Rule III, J4 & J5 can perform simultaneously

New Rule

As Rule II & III, J1 & J2 < J3 < J4 and J4 = J5,

Then J1 & J2 < J3 < J4 = J5.

So J1 & J2 < J3 < J5

Question No 16

As Rule I, J1 and J2 must be performing first, check the choice.

Choice A is correct.

Question No 17

Total Time required to complete the all Jobs = Time required for one Job × No of Job
= One Month × 6 = 6 Months

Less Time save as J4 & J5 perform Simultaneously = 6 -1 = 5 Months

Shortest Total Time = 5 Months

Choice D is correct.

Question No 18

Check the New Rule, D is wrong

So, Choice D is correct.

Question No 19

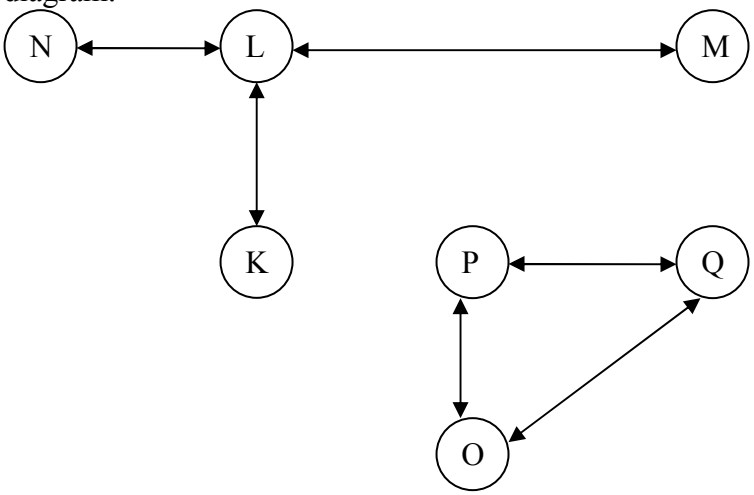
	1	2	3	4	5	6
J6 ≠ ½ as Rule I, J1 & J2 must Complete first. So	J1	J2				
J6 can 3rd Job as no other Rule Related with J6, so J6 = 3	J1	J2	J6			

So, Choice C is correct.

Test No 12

Question No 1 - 5

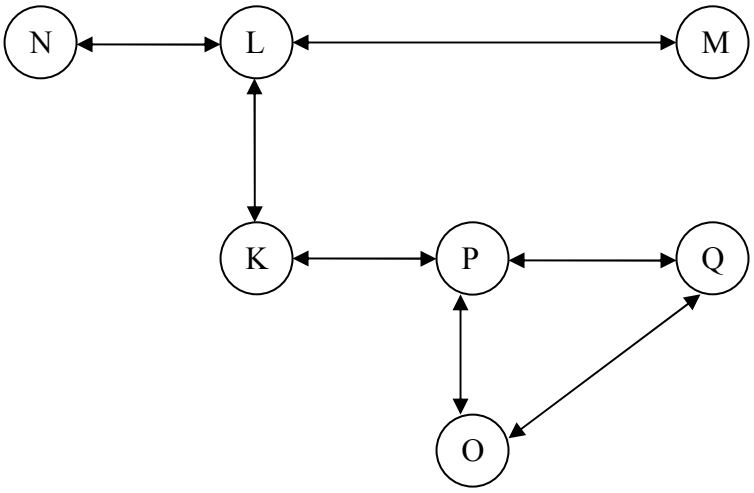
Place K L M N O P Q
Equal distance between LK = LM = LN = PO = PQ
Road I, K ⇔ L ⇔ M
Road II, L ⇔ N
Road III, O ⇔ P ⇔ Q ⇔ O
Draw the following diagram according to the Rules, and then give the answer by looking the diagram.



Question No 1
O, P, Q are attached with exactly other two places.
Check the choices,
So, Choice E is correct.
Question No 2
Equal Distance Equation LK = LM = LN = PO = PQ
Check the choices,
OQ ≠ OP
So, Choice D is correct.
Question No 3
In diagram, Place O, P and Q are connected with each other.
Check the choices,
Choice E is correct.

Question No 4

Draw the diagram according to the question



In diagram, N $\rightarrow$ O, is equal to

NL + LK + KP + KO

Let distance between NL is 1,

Then according to distance equation, 1 + 1 + KP + 1

Total distance between N and O, 3 + KP

In diagram, Q $\rightarrow$ L, is equal to

QP + PK + KL

Let distance between KL is 1,

Then according to distance equation, 1 + 1 + KP

Total distance between N and O, 2 + KP

Then one next Place will be 3 + KP,

So, traveling from Q to N or M is equal to traveling from N to O

Check the choices,

Choice C is correct.

Question No 5

In diagram, there is no road between K and Q

So, Choice B is correct.

Question No 6 - 11

Scholar	Q	R	S	T	U	V	W
Time Slot	1	2	3	4	5	6	7

Rules

Rule I, Q = T ± 1
Rule II, T < R
Rule III, S = 1/7
Rule IV, V = 4

New Rule

As Rule I & II, Q = T ± 1 & T < R, then Q < R

Question No 6

Choice A is correct as New Rule, Q < R

Question No 7

	1	2	3	4	5	6	7
As question and Rule IV,			R	V			
As New Rule, Q < R		Q	R	V			
As Rule I, Q = T ± 1, so	T/Q	Q/T	R	V			
As Rule III,	T/Q	Q/T	R	V			S
Remaining	T/Q	Q/T	R	V	U/W	W/U	S

Check the choices,
Choice E is correct.

Question No 8

As question, R < S and as New Rule, Q, T < R, then sequence Q, T < R < S and as Rule III S = 1/7, then S cannot be at Slot 1 and S must be at Slot 7

	1	2	3	4	5	6	7
As explanation and Rule IV,				V			S
As New Rule, Q, T < R and							
As Rule I, Q = T ± 1, then T and Q							
Must be at Slot 1, 2, 3							
Option 1	Q	T	R	V			S
Option 2		T	Q	V	R		S

Check the choices,
Choice C is correct.

Question No 9

	1	2	3	4	5	6	7
As question and Rule IV,		U		V			
Then as New Rule, Q , T < R and							
Q = T ± 1, they adjust at 5, 6, 7		U		V	Q/T	T/Q	R
As Rule III, S = 1/7	S	U		V	Q/T	T/Q	R
As remaining							
Option 1	S	U	W	V	Q	T	R
Option 2	S	U	W	V	T	Q	R

So, Choice B is correct.

Question No 10

	1	2	3	4	5	6	7
As question and Rule IV,				V			W
Then as Rule III, S must be at slot 1	S			V			W
As New Rule, Q, T < R, then							
Q and T must be at slot 2 and 3, so	S	Q/T	T/Q	V	R		W
Remaining	S	Q/T	T/Q	V	R/U	U/R	W

Check the choice,
Choice A is correct.

Question No 11

As question U < Q and New Rule Q, T < R, then sequence U < Q, T < R

	1	2	3	4	5	6	7
As Rule IV, V = 4				V			
As above explanation and Rule I,							
Option 1	U	Q	T	V	R		
Option 2			U	V	Q	T	R
As Rule III, S = 1/7, then							
Option 1	U	Q	T	V	R		S
Option 2	S		U	V	Q	T	R
Remaining							
Option 1	U	Q	T	V	R	W	S
Option 2	S	W	U	V	Q	T	R

Check the choices,
Choice D is correct.

Question No 12 - 15

Depict Building F, G, H, I
Depict Nature S, T, U

Rules

Rule I, two picture of depict Building cannot place next to each other.
As $B \neq B \pm 1$
Rule II, $I \neq S - 1$
Rule III, $H = T - 1$
Rule IV, $G_3 \rightarrow S_2$

New Rule

As Rule I, $O \neq O \pm 1$, and there are four depict Building and total seven picture.
Rule I fulfill under only one possibility that each depict Building place at odd position.
So, Depict Building = 1, 3, 5, 7 and then depict Nature must place at even position.
So, Depict Nature = 2, 4, 6

Question No 12

1st Step Check Rule I C, D, E is wrong
2nd Step Check Rule III A is wrong
So, Choice B is correct.

Question No 13

As New Rule, Depict Building = 1, 3, 5, 7. So H = 1, 3, 5, 7,
As Rule III, $H \neq 7$, so remaining H = 1, 3, 5
Choice B is correct.

Question No 14

	1	2	3	4	5	6	7
As question			G				
As Rule IV, $G_3 \rightarrow S_2$, S =2		S	G				
As New Rule, T/H = 4, 6							
T ≠ 4 as Rule III, H = T-1, if T =4							
Then H =3 while G =3, so T≠ 4							
Then T =6 and H= 5		S	G		H	T	
And then U = 4 as New Rule		S	G	U	H	T	
Remaining	F/I	S	G	U	H	T	I/F

Check the choice.
Choice C is correct.

Question No 15

As question U > S > T	1	2	3	4	5	6	7
As New Rule,		T		S		U	
As Rule III, H = T – 1, so	H	T		S		U	
I ≠ 3 as Rule II, G ≠3 as Rule IV							
So F = 3	H	T	F	S		U	
Remaining	H	T	F	S	I/G	U	G/I

Choice C is correct.

Question No 16 - 19

Boy P, Q, R, S, T
Two team Each Team has two member
Rule I No two player can play as a team in two consecutive round of game
Rule II one player of loss team, will sit out.
Rule III. Out player join winning team as forest.
Rule IV, tree team will consist on one player of loss team and one player of winning team.
Rule V, game cannot be tie
Rule VI, $R \neq T$

Question No 16

	Winning Team			Loss Team		Outer Player
As question	P	T				R
As Rule III, R join winning team	P	T	R			
As Rule IV & VI, T must join Loss team.	P	R		T		

Check the choice,
Choice A is correct.

Question No 17

	Forest Team		Tree Team		Outer Player
As question	Q	R			P
Then remaining	Q	R	S	T	P
As Rule III, P join forest team	P	Q	R	S	T
As Rule IV, Q/R will join tree team, Following options					
Option I	P	Q	R	S	T
Option II	P	R	Q	S	T
Option III	P	R	Q	T	S

Check the choice
Choice D is correct.

Question No 18

	Forest Team		Tree Team		Outer Player
As question	P	S			
Then as Rule VI, R/T must be Outer player	P	S	Q	R/T	T/R
Now as Rule III, T/R will join Forest Team,	T/R	P	S		

Then $Q \neq$ forest team,
Check the choice,
Choice B is correct.

Question No 19

	Forest Team		Tree Team		Outer Player
As question,					S
Then as Rule VI, R and T not in same team, so	R/T		T/R		S
As remaining	R/T	P/Q	T/R	Q/P	S

Check the choice
Choice A is correct.

Test No 13

Question No 1 - 5

Trees	O	A	M	B	L	D
Pots	1	2	3	4	5	6

Rules

Rule I, O < B
Rule II L < D
Rule III, A ≠ 1
Rule IV, M = O ± 1

New Rule

As Rule I & IV, O < B & O = M ±1 then M < B

Question No 1

1st Step	Check Rule II	A, is wrong
2nd Step	Check Rule III	B is wrong
3rd Step	Check Rule IV	D is wrong
4th Step	Check Rule I	C is wrong

So, choice E is correct.

Question No 2

As question ` B < A
As Rule I, O < B and B < A, then O < B < A
Check the choice,
Choice A is correct.

Question No 3

As question D < O
As Rule I, O < B and D < O, then D < O < B
As Rule II, L < D, then L < D < O < B
As Rule IV, M = O ± 1, then L < D < M, O < B
Check the choice,
Choice B is correct.

Question No 4

As question B < L
As Rule I, O < B, then O < B < L
As Rule II, L < D, then O < B < L < D
As Rule IV, M = O ± 1, then M, O < B < L < D

Draw the sequence	1	2	3	4	5	6
Option 1	O/M	M/O	B	L	D	A
Option 2	O/M	M/O	A	B	L	D

Check the choice,
Choice D is correct.

Question No 5

As question O = D ± 1
As Rule II, L < D, then L < O, D
As Rule I, O < B, then L < O, D < B
As Rule IV, M = O ± 1, then L < M, O, D < B

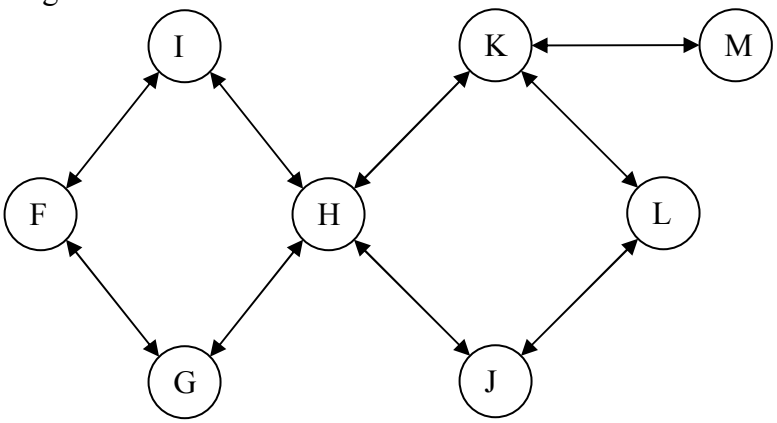
Draw sequence	1	2	3	4	5	6
As Rule III, A ≠ 1, then	L	M	O	D	B	A

Check the choice, Choice A is correct.

Question No 6 - 11

Cities	F	G	H	I	J	K	L	M

Rule I, F ⇔ G & I
Rule II, H ⇔ G & I
Rule III, J ⇔ H & L
Rule IV, K ⇔ H, L & M
Draw the following diagram according to the Rules, and then give the answer by looking the diagram.



Question No 6
L → M, then L → K → M
So, Choice E is correct.
Question No 7

Choice	True/False
A	Yes
B	Yes
C	False

So, Choice C is correct.
Question No 8
First draw sequence of message transfer from M to I
Option 1 M →K →H →I
Option 2 M →K →L →J →H →I
Option 3 M →K →H →G →F →I
Option 4 M →K →L →J →H →G →F →I
Check the choices,
Choice E is correct.
Question No 9
Draw the path I →H → K
Only one intermediate,
So, Choice A is correct.
Question No 10
It is K, as if K disconnect then only M cannot receive any message from other network
So, Choice D is correct.

Question No 11 - 14

Teacher	R, S, V	
Student	F, H, J, L, M	
Driver's seat	Front seat	Two bench each have three seats

Rules

Rule I	an Teacher must sit on each bench
Rule II	S or R must sit on Driver's seat
Rule III	J = M ± 1

New Rules

As Rule I & II, fulfill only if only one Teacher sit on one bench and no Teacher sit on front seat.

Question No 11

Choice		Possibility
(A)	J	wrong as Rule III, J = M ± 1
(B)	L	yes can be sit on front seat, no restriction for L
(C)	R	wrong as New Rule
(D)	S	wrong as New Rule
(E)	V	wrong as New Rule

Choice B is correct.

Question No 12

1st Step	Check New Rule	A, C is wrong
2nd Step	Check Rule III	B, E is wrong

So, Choice D is correct.

Question No 13

	D.S	F.S	Bench 1			Bench 2		
			1	2	3	1	2	3
As question			F	V				
As Rule III			F	V		M	J	
As New Rule & Rule II	R/S		F	V		M	J	S/R
Then remaining	R/S	H/L	F	V	L/H	M	J	S/R

Check the choice

Choice E is correct.

Question No 14

	D.S	F.S	Bench 1			Bench 2		
			1	2	3	1	2	3
As question			J			S		
As Rule II	R		J			S		
As Rule III	R		J	M		S		
As New Rule, V=bench 1	R		J	M	V	S		

Remaining F, H, and L can sit Anywhere, check the choice

Choice E is correct.

Question No 15 - 18

House Styles F, G, H, I, J, K, L
Five Houses
Rules
Rule I One Style will select for only one house
Rule II (I or L) must be select, but not both
Rule III $K \rightarrow H$
Rule IV $G \neq I$
New Rule as Rule II & IV, (I or L) must select and $G \neq I$,
It means if G select then L must be select. Or $G \rightarrow L$

Question No 15
As New Rule $G \rightarrow L$, L must be select.
Choice E is correct.
Question No 16

	Five House Styles				
As question	F	G	J		
As New Rule, $G \rightarrow L$, so	F	G	J	L	
As Rule IV, $K \rightarrow H$, so K cannot be select					
Then H must be select	F	G	J	L	H

Check the choice,
Choice C is correct.
Question No 17

1st Step	Check Rule II	A, E is wrong
2ndStep	Check Rule III	B is wrong
3rd Step	Check Rule IV	D is wrong

So, Choice C is correct.
Question No 18
L not select than I must select as Rule II
I select then G cannot be select as Rule IV
So Choice B is correct.

Test No 14

Question No1 - 4

Targets	1	2	3	4	5	6	7
Players	M	N	O				

Rules

Rule I, consecutive order from 1 to 7
Rule II, M/O can shot odd and even target
Rule III, N → odd target → 1, 3, 5, 7
Rule IV, M & N must shot two or more targets
Rule V, O = Shot only one target
Rule VI, M cannot shot three consecutive targets

Question No 1

Minimum Target Shot by Player	No of Targets
M	2
N	2
O	1
Total shot	5
Then next shot Target	6

Choice D is correct.

Question No 2

Total Target				7			
Remaining targets after firing by O = 1				6			
As M & N equal target, then No. of targets shot by M & N				6/2 → 3			
Draw sequence		1	2	3	4	5	6	7
Option 1	as Rule III	N		N		N		
Option 2				N		N		N

Check the choice
Choice E is correct.

Question No 3

As Rule III and Rule IV, N must shot two or more odd targets,
Check the choice,
Choice A is wrong because in this choice N = 1 which is against the Rule III & IV,
So Choice A is correct answer.

Question No 4

Total Targets	7
Maximum Target shot by O	(1)
Then No. of Target shot by M & N	6
And No. of Half targets shot by M & N	3
Total target shot by M, N and O	4
Then remaining targets (7 - 4)	3

Choice C is correct.

Question No 5 - 10

Three Single Roads					Four Double Roads	
Colors	B	G	O	P	W	M	S

Rules

Rule I, B ≠ P

Rule II, O ≠ W/S

New Rule

The total of Lines and Routes is seven and seven color, so each color will use to show only one Line or Route.

As Rule II, O ≠ W/S then W and S must use in same group or W = S

Question No 5

	Single Roads	Double Roads
As question	B	
As Rule I, B ≠ P, so	B	P

Check the choices,

Choice C is correct.

Question No 6

	Single Roads	Double Roads
As question		W
Then as New Rule, W = S		W S
As Rule II, W ≠ O, so	O	W S

Check the choices,

Choice B is correct.

Question No 7

	Single Roads			Double Roads			
As question	S	P					
As New Rule, W = S, so	S	P	W				
As Remaining	S	P	W	O	B	M	G

Check the choices,

Choice D is correct.

Question No 8

	Single Roads			Double Roads			
As question				W	B		
As New Rule, W = S				W	B	S	
As Rule I, B ≠ P, so	P			W	B	S	
As Rule II, O ≠ W/S, so	P	O		W	B	S	
As remaining,	P	O	G/M	W	B	S	M/G

Check the choices,

Choice C is correct.

Question No 9

	Single Roads			Double Roads			
As question and let G used in subway	G			B	S		
As Rule I, B ≠ P, so	G	P		B	S		
As Rule II, O ≠ W/S, so	G	P	O	B	S	W	
As remaining,	G	P	O	B	S	W	M

Check the choices, Choice D is correct.

Question No 10

Check the each choice one by one

	Single Roads			Double Roads			
As choice,	P	M					
Then as New Rule, W = S, so W and S							
Cannot be use in Single Roads, then	P	M		W	S		
As Rule II, O ≠ W/S, then	P	M	O	W	S		
As remaining	P	M	O	W	S	B	G

So, there is only one choice, so Choice A is correct.

Question No 11 - 14

Firms F G H I J K
Device 1 Device 2 Device 3
Each Device made at different firm.

Rules

Rule I, F ≠ I
Rule II, G ≠ H
Rule III, one of Device made at J
Rule IV, K ≠ D2
Rule V, D3 ≠ H/K

New Rule

As Rule IV, & J, K ≠ D2 and K ≠ D3
Then K can made only Device 1

Question No 11

	Firms can made Device 3
Total Firm can made Device 3	F, G, H, I, J, K
As Rule I, I made Device, so F cannot made Device, so	G, H, I, J, K
As Rule V, K and H cannot made Device 3, so	G, I, J
Device 3 cannot made by I, as it already made Device 1	G, J

Check the choice,
Choice B is correct.

Question No 12

1st Step	Check Rule I	D is wrong
2nd Step	Check Rule II	No remaining wrong
3rd Step	Check Rule III	A is wrong
4th Step	Check Rule IV	B is wrong
5th Step	Check Rule V	C is wrong

So, Choice E is correct.

Question No 13

	Firms can made Device
Total Firms	F, G, H, I, J, K
As question, F & I not made any Device, so	G, H, J, K
As Rule II, one of H and G can made Device not both, so	J, K (G/H)

Now it is clear that J & K made Device.
As New Rule K = Device 1
And then J = Device 2 or 3
And one Device made by G/H
Check the choice,
Choice A is correct.

Question No 14

	Device 1	Device 2	Device 3
As New Rule, K = D1	K		
As Rule V, H ≠ D3, then H = D2	K	H	
And remaining as Rule III,	K	H	J

Choice E is correct.

Question No 15 - 18

Boys F, J, K, M, R, S, T

Blue Group Yellow Group

Each Group consists of exactly three boys.

Rules

Rule I, $M_B \rightarrow K_Y$

Rule II, $F_B \rightarrow R_Y$

Rule III, $R \neq S$

Rule IV, $J \neq K$

Question No 15

1st Step	Check Rule I	D is wrong
2nd Step	Check Rule II	B is wrong
3rd Step	Check Rule IV	A, C is wrong

So, Choice E is correct.

Question No 16

	Blue Group		Yellow Group		
As question	M	F			
As Rule I, K will be in yellow group,	M	F	K		
As Rule II, R will be in yellow group,	M	F	K	R	
As Rule III, R≠S, so S cannot in yellow group.					
As Rule IV, J≠K, so J cannot in yellow group.					
Then remaining T must in yellow group.	M	F	K	R	T

So, Choice D is correct.

Question No 17

	Blue Group		Yellow Group
As question	M		
As Rule I, $M_B \rightarrow K_Y$, so	M		K
As Rule IV, J ≠ K, so if J select then			
Must be in Blue group	M	J	K
Check the choice			

So, Choice B is correct.

Question No 18

	Blue Group		Yellow Group
T not joins either group.			
As question	F		
As Rule II, $F_B \rightarrow R_Y$, R in yellow group	F		R
As Rule III, R ≠ S, so S in Blue group	F	S	R
Check the choice,			

Choice E is correct.

Test No 15

Question No 1 - 4

Summer Dress I J K
Winter Dress L M N O U
Exactly two summer dresses and exactly three winter dresses

Rules

Rule I, J ≠ U
Rule II, L ≠ O
Rule III, M ≠ U

Question No 1

	Summer Dresses	Winter Dress
As question	J	
As Rule I, J ≠ U, U cannot be select		
As Rule II, L ≠ O, so one of L & O will select	J	L/O
Then remaining winter dresses M & N must be select		
In order to exactly three winter dresses	J	L/O M N

Check the choice,
Choice D is correct.

Question No 2

	Summer Dresses	WinterDresses
K not include than remaining I & J summer		
Dress must include, so	J I	
As Rule I, J ≠ U, so U not include		
As Rule II, L ≠ O, so one of L & O will select	J I	L/O
Then remaining winter dress must select	J I	L/O N M

Check the choice,
Choice E is correct.

Question No 3

	Summer Dresses	WinterDresses
As Rule II, L ≠ O, so only one of L & O will select		L/O
As Rule III, M ≠ U, so only one of M & U select		L/O M/U
Then remaining winter dress N must be select		
In order to select exactly three winter dresses		L/O M/U N

Check the choice,
Choice E is correct.

Question No 4

	Summer Dresses	WinterDresses
As question		U
As Rule I, J ≠ U, so J cannot include, then		
Remaining I & K summer dresses must include	I K	U
As third question Rule, N must be select		
In each case	I K	U N
As Rule III, M ≠ U, so M cannot be select		
As Rule II, L ≠ O, so one of L & O can select	I K	U N L/O

Check the choice, Choice B is correct.

Question No 5 - 10

Workers	R	S	T	U	V
Days	Mon	Tues	Wed	Thur	Fri
Numbering	1	2	3	4	5

Exactly two Workers assign to work each day

Rules

Rule I, Each of Workers must work at least once.
Rule II, None of Workers can work on three consecutive days
Rule III, S = 1
Rule IV, U = 4, 5
Rule V, R ≠ S

Question No 5

	1	2	3	4	5
As Rule IV,				U	U

As Rule II, U ≠ 3,
So, Choice D is correct.

Question No 6

	1	2	3	4	5
As Rule III, and Rule IV,	S			U	U
As Rule V, R ≠ S, then as Rule II,					
Option 1	S	R		U, R	U, R
Option 2	S	R	R	U	U, R

Tuesday and Friday must include,
So, Choice C is correct.

Question No 7

	1	2	3	4	5
As question and Rule II & III,	S	S		S	S
As Rule IV,	S	S		U, S	U, S
As Rule I and Rule V, R must work on Wed	S	S	R	U, S	U, S
As first question Rule, U ≠ 3,then	S	S	R, T/V	U, S	U, S

Check the choices,
Choice A is correct.

Question No 8

R = U then	1	2	3	4	5
As question and Rule IV,				U, R	U, R
As Rule III,	S			U, R	U, R

Now analyze each choice,

Choice

A Cannot be true as Rule V, S ≠ R
B Cannot be true as Rule II,
C Cannot be true, because exactly two Workers can work on each day
D Cannot be true, because exactly two Workers can work on each day
E Yes, V can be work on Tuesday, No restriction

So, Choice E is correct.

Question No 9

	1	2	3	4	5
As question and Rule II,	T	T		T	T
As Rule III, and Rule IV,	S, T	T		U, T	U, T
As question S & T ≠ 3					
As first question Rule, U ≠ 3					
Then remaining	S, T	T	R, V	U, T	U, T

Choice B is correct.

Question No 10

	1	2	3	4	5
As Rule III &IV,	S			U	U
Now analyze each choice,					

Choice

A	first put R in sequence as Rule V, and Avoid with U, as question requirement Then S cannot work on Tuesday and Wednesday as Rule V, then S must work with U on one day.	S	R	R	U	U

Yes Choice A is true, So Choice A is correct answer.

Question No 11 - 14

Dogs G, N, O, U, V, W, X

Rules

Rule I, V > X

Rule II, U > W

Rule III, G > X

Rule IV, X > O > N

New Rule

Arrange the dogs according to Rules

V, G > X > O >N

Question No 11

1st Step Check New Rule A, B, D is wrong

2nd Step Check Rule II E is wrong

So, Choice C is correct.

Question No 12

Choice A is correct as New Rule

Question No 13

If W > X

As Rule II U > W and as Rule IV, X > O > N, then sequence will be as

U > W > X > O > N

Check the choice

Choice B is correct.

Question No 14

If X > U then as New Rule will be as

V, G > X > O, U

Check the choice,

Choice C is correct.

Question No 15 - 18

Tree Q, R, S, T, U, V, W

Rules

Rule I, $W \neq (Q \pm 1)$ & $(R \pm 1)$

Rule II, T = 1 or 7

Rule III, S = (U ±1 or W ± 1) or between U and W

Rule IV, $V_6 \rightarrow R_7$ and $V_1 \rightarrow R_2$

Question No 15

	1	2	3	4	5	6	7
As question, V = 7							V
As Rule II, T = 1/7, V= 7, so T =1	T						V
As question, W = T + 1, so W = 2	T	W					V

So, Choice A is correct.

Question No 16

1st Step	Check Rule II	E is wrong
2nd Step	Check Rule I	B, D is wrong
3rd Step	Check Rule III	No remaining wrong
4th Step	Check Rule IV	A is wrong

So, Choice C is correct.

Question No 17

	1	2	3	4	5	6	7
As question	V					Q	
Then as Rule II, T = 7	V					Q	T
As Rule IV, $V_1 \rightarrow R_2$, R = 2	V	R				Q	T
Then as Rule I, W = 4	V	R		W		Q	T

So, Choice E is correct.

Question No 18

1st Step	Check Rule III	C, E is wrong
2nd Step	Check Rule I	A,B is wrong

So, Choice D is correct.

Test No 16

Question No 1 - 5

Meals F G H I J K L M

Five Meals each day

Exactly three meal of previous day must include, except the first meal of previous day

Rules

Rule I, $F \neq L$

Rule II, $G \rightarrow J$ and $G < J$

Rule III, $H \rightarrow L$ and $H < L$

Rule IV, $I/K = 5$

New Rule

As Rule I & Rule III, $F \neq L$ & $H \rightarrow L$ then $F \neq H$

Question No 1

1st Step	Check Rule I	A is wrong
2nd Step	Check Rule II	B is wrong
3rd Step	Check Rule III	E is wrong
4th Step	Check Rule IV	D is wrong

So, Choice C is correct.

Question No 2

First day meals F G M J K

Then the second day must include three meals of G, M, J, K of previous, and except first. Check the choices,

Choice E is wrong as it consist four previous day meal and one first day meal.

So, Choice E is correct answer.

Question No 3

As Rule IV, $I/K = 5$

As Rule II, $G \rightarrow J$ and $G < J$, then $G \neq 4$, because if $G = 4$ then $J = 5$ but J cannot be five, so $G \neq 4$.

As Rule III, $H \rightarrow L$ and $H < L$, then $H \neq 4$

Check the choice,

Choice D is correct answer.

Question No 4

	First Day Meals				
	1	2	3	4	5
As question	H	M			
As Rule IV, $I/K = 5$	H	M			I/K
As Rule III, $H \rightarrow L$, so	H	M	L		I/K
As Rule I, $F \neq L$, so F cannot be done					
As Rule II, G cannot be done.					
Then remaining J must be done.	H	M	L	J	I/K

Check the choices.

Choice E is correct.

Question No 5

	First Day Meals				
	1	2	3	4	5
As question				H	
As Rule III, H → L, and H < L, so L = 4				H	L
As Rule IV, I/K =5				H	L I/K

As Rule II, G → J and G < J, then G ≠ 2,
Because if G = 2 then J cannot be done after G
So G ≠ 2
Choice A is correct.

Question No 6 - 11

Teacher Faculty Member	R	T	U	X	Y
Student Member	S	V	W		

Rules

Rule I, Commission consist of exactly two teacher and exactly two student members.

Rule II, $S \neq T$

Rule III, $Y \neq (W, X)$

Rule IV, $U \rightarrow T$

Rule V, $(R \ \& \ T) \neq V$

Question No 6

Add "Y" in each choice and then check the Rules

1st Step	Check Rule I	E is wrong
2nd Step	Check Rule II	C is wrong
3rd Step	Check Rule IV	D is wrong
4th Step	Check Rule III	B is wrong

So, Choice A is correct.

Question No 7

	Teacher	Student	
As question	T		
As Rule II, T ≠ S, then remaining student			
Faculty member V & W, must join	T	V	W

Check the choices,

Choice C is correct.

Question No 8

	Member cannot join	
As Rule I, S ≠ T, so T cannot join	T	
As Rule IV, U → T, but T cannot join, so U		
Also cannot join.	T	U

Check the choices,

Choice A is correct.

Question No 9

	Teacher		Student	
As question, then remaining teacher member are				
(T, U, X), as Rule IV, U → T, then T must join	T			
As Rule II, S ≠ T, then remaining student member.	T		V	W
Remaining	T	U/X	V	W

Check the choices,

Choice E is correct.

Question No 10

	Teacher		Student	
Then S & W (student member) must be join			S	W
As Rule II, S ≠ T, so T cannot joint,				
As Rule IV, U → T, T cannot join, so U cannot join				
As Rule III, Y ≠ (W, X), so Y cannot join				
Then remaining	R	X	S	W

Check the choices,

Choice A is correct.

Question No 11

	Teacher		Student	
Option 1				
First let W not join the commission, then			S	V
As Rule II, S ≠ T, so T cannot joint,				
As Rule IV, U → T, T cannot join, so U cannot join				
Then remaining as Rule III,	R	X/Y	S	V
Option 2				
Now Let V not join the commission, then			S	W
As Rule II, S ≠ T, so T cannot joint,				
As Rule IV, U → T, T cannot join, so U cannot join				
As Rule III, Y ≠ (W, X), so Y cannot join				
Then remaining	R	X	S	W
Option 1	R	X/Y	S	V
Option 2	R	X	S	W

Check the choices,
Choice A is correct.

Question No 12 - 15

Banks	I	J	K	
Employees	L	M	N	O

Rules

Rule I, L → I and one another company

Rule II, Some time J employ only one Employee and rest time J employ exactly two Employees.

Rule III, I & K each employ exactly two Employees all the time.

New Rule

As Rule III and Rule II, no company can employ more then two Employee.
And only J can employ one Employee.

Question No 12	I		J		K	
As question			N		M	N
As Rule I, L → I	L		N		M	N
As Rule III, then O must work in I	L	O	N		M	N

As Rule II, O can work in J but not conform.
So Choice A is correct.

Question No 13	I		J		K	
As Rule I,	L					
As question	L	M				
And L & M can work for J or O,						
Option 1	L	M	L	M		
Option 2	L	M			L	M
Then remaining O						
Option 1	L	M	L	M	O	
Option 2	L	M	O		L	M

Check the choice,
Choice E is correct.

Question No 14

	I		J		K	
As question			N			
As Rule I, L → I, and one another company						
So L → O	L		N		L	
Then remaining as						
Option 1	L	O	N		L	M
Option 2	L	M	N		L	O

Check the Choice,
Choice E is correct.

Question No 15

	I	J	O	Total job
As question and New Rule	2	1	2	5
As Rule I, L work for two companies, so				
Remaining jobs				3

Remaining Employees (M, N, O)
As each Employee work for at least one company, so remaining Employees work for only one company, check the choice,
Just option III must be true.
So Choice C is correct.

Question No 16 - 19

Varieties M N O P Q R S

Rules

Rule I, $M \neq (O, Q, R)$

Rule II, $P \neq (N, R)$

Rule III, $P \rightarrow$ Not in a box which have more than two Varieties

Rule IV, $Q \neq S$

Rule V, $N \rightarrow R$

Question No 16

1st Step	Check Rule I	B is wrong
2nd Step	Check Rule II	A, C is wrong
3rd Step	Check Rule IV	E is wrong

So, Choice D is correct.

Question No 17

	Tank			Remaining Varieties
	1	2	3	
As question	Q			M, N, O, P, R, S
As Rule I, M cannot be with Q, so				N, O, P, R, S
As Rule III, P cannot be join, so				N, O, R, S
As Rule IV, $Q \neq S$, so				N, O, R
As Rule V, $N \rightarrow R$, So N cannot join				O, R

Check the choices,

Choice C is correct.

Question No 18

As Rule I, M cannot be select because if M select then O, Q, R cannot be select and then possible group of Varieties are M, N, S which is wrong as question condition.

So M cannot be joining.

Check the choice

Choice A is correct.

Question No 19

	Tank			Remaining Varieties
	1	2	3	
As question	N			M, O, P, Q, R, S
As Rule V, $N \rightarrow R$, so	N	R		M, O, P Q, S
As Rule III, P cannot join N & R	N	R		M, O, Q, S
As Rule I, $M \neq R$, so	N	R		O, Q, S

Remaining O, S, and Q can join N & R, check the choice,

Choice D is correct.

Test No 17

Question No 1 - 5

Two Row of five Chairs

Men	F	G	H	J	L
Women	M	R	S	T	Y

Rules

Rule I, Men cannot sit no more then two consecutive Chairs
Rule II, $T \neq H \pm 1$
Rule III, $F \neq G \pm 1$
Rule IV, $M = R \pm 1$
Rule V, $H = J \pm 1$

Question No 1

1st Step	Check Rule I	A is wrong
2nd Step	Check Rule II	E is wrong
3rd Step	Check Rule III	B is wrong
4th Step	Check Rule IV	D is wrong

So, Choice C is correct.

Question No 2

	6	7	8	9	10
As question		J	H		F
As Rule I, G & L cannot sit,					
As Rule II, $T \neq H \pm 1$, so T cannot sit,					
As Rule IV, $M = R \pm 1$, so both M & R cannot sit					
Then remaining S & Y can sit		J	H	S/Y	F

Check the choices,
Choice E is correct.

Question No 3

	1	2	3	4	5
As question	G	Y	J		
As Rule V, $H = J \pm 1$, so H = 4	G	Y	J	H	
As Rule I, Men cannot sit at 5					
As Rule II, $T \neq H \pm 1$, so T cannot sit					
As Rule IV, $M = R \pm 1$, so both M & R cannot sit					
Then remaining S must be sit at 5	G	Y	J	H	S

Choice D is correct.

Question No 4

Remaining Men G, H, J Remaining Women R, M

	6	7	8	9	10
As Rule I, G, H, J cannot sit together					
As Rule V, $H = J \pm 1$, so H & J must sit together					
As Rule IV, $M = R \pm 1$, so M & R must sit together					
Then only two possibility of sitting are as					
Option 1	G	R	M	H	J
Option 2	J	H	M	R	G

Check the choices,
Choice B is correct.

Question No 5

As many Women as possible are Chaired on first bench, then on second bench few Women as possible as will chaired.

There is only one restriction of Rule I, if four Men Chaired on second bench then one Women will Chaired between them and that Chair will be 8th.

6	7	8	9	10
M	M	W	M	M

So, Choice B is correct.

Question No 6 - 11

		Instructor		Speakers			
Model School Team		M		N	O	P	
Oxford School Team		Q		R	S	U	
Consecutives seats	1	2	3	4	5	6	7

Rules

Rule I, All Speakers must be seated

Rule II, Winner team Instructor will sit at first seat and one Speaker of winner team will be sit at fourth seat.

Rule III, Incase of tie mach, the judge Z will be sit at fourth seat and Instructor will not sit.

Rule IV, No two Speaker of same team will sit next to each other.

Rule V, $N \neq U \pm 1$

New Rule

As Rule II, we know that one Speaker of winner team will sit at fourth seat, and to fulfill the requirement of Rule IV, it only possible that all Speaker of winner team will sit at even seats.

Question No 6

1st Step	Check Rule II	A is wrong
2nd Step	Check Rule III	C is wrong
3rd Step	Check Rule IV	E is wrong
4th Step	Check Rule V	B is wrong

So, Choice D is correct.

Question No 7

	1	2	3	4	5	6	7
As question		O					U
Then as Rule IV, N or P must sit at 4 or 6		O		N/P		P/N	U
As Rule III, M must sit at first	M	O		N/P		P/N	U

Choice A is correct.

Question No 8

	1	2	3	4	5	6	7
As question	U						P
As Rule II, Instructor not sits in first seat, so							
It is tie, and as Rule III,	U			Z			P
As Rule V, $N \neq U \pm 1$, and $N \neq 6$ as Rule IV							
So N must sit at 3 or 5 and remaining O							
Option 1	U		N	Z	O		P
Option 2	U	O		Z	N		P
Option 3	U		O	Z	N		P
Remaining,							
Option 1	U	R/S	N	Z	O	S/R	P
Option 2	U	O	R/S	Z	N	S/R	P
Option 3	U	S/R	O	Z	N	S/R	P

As Rule IV, Option 1 & 3 is wrong. So,

Choice A is correct.

Question No 9

1st Step	Check Rule III	B is wrong
2nd Step	Check Rule IV	D, A is wrong
3rd Step	Check Rule V	C is wrong

So, Choice E is correct.

Question No 10

	1	2	3	4	5	6	7
As question	Q		N				
As Rule IV, O & P will sit at 5 and 7 seats	Q		N		O/P		P/O
As Rule R, $N \neq U \pm 1$, so $U = 6$	Q		N		O/P	U	P/O
As remaining	Q	R/S	N	S/R	O/P	U	P/O

Check the choices,
Choice D is correct.

Question No 11

	1	2	3	4	5	6	7
As question			N		S	P	
One odd position not occupy according to The New Rule, so it must be tie, then							
Judge Z must sit at 4^{th} seat as Rule III			N	Z	S	P	
Remaining O of Model School team can only Sit at first seat,	O		N	Z	S	P	
Then Remaining as Rule V,	O	R	N	Z	S	P	U

Choice E is correct.

Question No 12 - 15

Person F, G, H, I, J, K

Rows 1 2 3 4 Each Row has two chairs

Rules

Rule I, F will sit alone

Rule II, G = I

Rule III, H ≠ J

Rule IV**,** Single Person chairs → 1 & 3

New Rule I, As Rule I & IV, F = 1 or 3

New Rule II as Rule II & IV, G & I ≠ 1 or 3

Question No 12

	Remaining Persons
	F, G, I, J, K
As Rule II, G & I cannot sit with H, so	F, J, K
As Rule III, J cannot sit with H, so	F, K
As Rule I, F cannot sit with any other person, so	K

Then H must sit with K

Choice E is correct.

Question No 13

	Row 1	Row 2		Row 3	Row 4	
	1	1	2	1	1	2
As question,		G	I			
As New Rule I, then						
Option 1	F	G	I			
Option 2		G	I	F		
As Rule III, both H and J cannot						
Sit at Row 4,						
Option 1	F	G	I	J/H	H/J	
Option 2	J/H	G	I	F	H/J	
As remaining						
Option 1	F	G	I	J/H	H/J	K
Option 2	J/H	G	I	F	H/J	K

Check the choice,

Choice E is correct.

Question No 14

	Remaining Persons
	F, G, H, I, J
As Rule I, F cannot sit with any other so,	G, H, I, J
As Rule II, G and I cannot sit with other, so	H, J

K can sit with H and J so, Choice B is correct.

Question No 15

	Row 1	Row 2		Row 3	Row 4	
	1	1	2	1	1	2
As question		H	K			
As Rule III, G and I must sit						
At Row 4		H	K		G	I
As Rule I,						
Option 1	F	H	K		G	I
Option 2		H	K	F	G	I
As remaining						
Option 1	F	H	K	J	G	I
Option 2	J	H	K	F	G	I

Check the choice, Choice D is correct.

Question No 16 - 19

Singer S.T S.S
Dancer (D) Juggler (J) Actor (A)

Rules

Rule I, $S.T \neq S.S \pm 1$
Rule II, $J = (S.T/S.S) - 1$
Rule III, $A = D \pm 1$

Question No 16

	1	2	3	4	5
As question	A				
As Rule III, $A = D \pm 1$, so $D = 2$	A	D			
As Rule I, S.T & S.S must be separate so,					
They will be at 3 and 5	A	D	S.T		S.S
Then remaining	A	D	S.T	J	S.S

Check the choice,
Choice B is correct.

Question No 17

	1	2	3	4	5
As question	S.T				S.S
As Rule II, $J = (S.T/S.S) - 1$, so $J = 4$	S.T			J	S.S
As remaining	S.T	A/D	D/A	J	S.S

Check the choice,
Choice C is correct.

Question No 18

As question $A = S.S - 1 = J - 2$
$A \neq 1$ as Rule III, then $A \rightarrow 2, 3$

	1	2	3	4	5
Option 1	D	A	S.S	J	
Option 2		D	A	S.S	J

$J \neq 5$ as Rule II, so Option 2 is not possible then remaining

Option 1	D	A	S.S	J	S.T

Check the choice,
Choice E is correct.

Question No 19

As question $J < D$
Put singers in each position according to choice and then place remaining entertainer according to the Rules and then analyze each choice.

Choice	1	2	3	4	5
A	S.T/S.S	J	S.S/S.T	A	D
B	J	S.T/S.S	A	D	S.S/S.T
C	S.T/S.S	J	S.S/S.T	D	A
D	J	D	A	S.T/S.S	S.S/S.T

Choice D is not possible,
So Choice D is correct answer

Test No 18

Question No 1 - 5

Men A B G J M T

Each Shift required two Firemen, one Gas Expert and one Driver

Rules

Rule I, Each player must can perform as at least one Shift and each player can perform as, at most one Role in a Shift.

Rule II, No person can perform as same type of Role in two consecutive Shift

Rule III, "A" can perform as Fireman only and must can perform in first Shift

Rule IV, "B" can perform as Fireman and Driver

Rule V, "G" can perform as Fireman and Gas Expert

Rule VI, "J" can perform as Gas Expert only

Rule VII, "M" can perform as Fireman and Driver

Rule VIII, "T' can perform as Driver only

Draw the Table according to the Rules, and then give the answer by looking the Table.

Players	Fireman	Gas Expert	Driver
A	✓		
B	✓		✓
G	✓	✓	
J		✓	
M	✓		✓
T			✓

Question No 1

As Rule III, A can perform as Fireman in first Shift and cannot perform as in second with same Role as Rule II,

So Choice A is correct.

Question No 2

As table only G and J can perform as Gas Expert, now G can perform as Gas Expert in first Shift, then G cannot can perform as Gas Expert in second Shift as Rule II, then J must can perform as Gas Expert in second Shift,

So Choice D is correct.

Question No 3

In first Shift man can perform as	A	B	G	J
Instruments can perform as	F	D	F	G

Question Rule I, as A and J can perform as only one service so they cannot can perform as in second Shift as Rule II

Question Rule II, If J not can perform as then G must can perform as Gas Expert in second Shift.

1st Step Check question Rule I, A, B, C, D is wrong

So, Choice D is correct.

Question No 4

In above table, A , J and T can perform as only one Role , so they cannot can perform as in all three Shift as Rule II, and remaining B, G and M can perform as in all three Shift.

So, Choice B is correct.

Question No 5

In table, Fireman can perform as four man and only "A", can perform as one Role, but as Rule III, he must only 1st Shift, so it is not "A".

In table, Driver can perform as three man and only T can perform as one Role, now if T unavailable then all three Shifts can perform remaining man.

So, Choice E is correct.

Question No 6 - 11

Varieties	G	H	I	J	K

Rules

Rule I, $G \neq H \pm 1$

Rule II, $K \neq H \pm 1$

Rule III, $G \neq I \pm 1$

Rule IV, $I \neq J \pm 1$

Question No 6

1st Step	Check Rule I	E is wrong
2nd Step	Check Rule II	D is wrong
3rd Step	Check Rule III	A is wrong
4th Step	Check Rule IV	C is wrong

So, Choice B is correct.

Question No 7

	Sequence
As Rule I & III, $G \neq H$ & $G \neq I \pm 1$, then G only place with K, then	G, K
As Rule II, $K \neq H \pm 1$, so I place with K, then	G, K, I
Remaining	G, K, I, H

Check the choices,

Choice A is correct.

Question No 8

	Sequence
As Rule I & III, $G \neq H$ & $G \neq I \pm 1$, then G only place with J, then	G, J
As Rule IV, $I \neq J \pm 1$, then H will place with J, then	G, J, H
Remaining	G, J, H, I

Check the choices,

Choice C is correct.

Question No 9

	Sequence
As Rule III & IV, $G \neq I \pm 1$ & $I \neq J \pm 1$, then I must place with K	I, K
Remaining	I, K, J/G, G/J

Check the choices,

Choice D is correct.

Question No 10

	1	2	3	4	5
As question and Rule IV, $I \neq J \pm 1$,	I		J		
As Rule I & II, $H \neq G \pm 1$ and $H \neq K \pm 1$, then H only can place between I and J, so	I	H	J		
Remaining	I	H	J	G/K	K/G

Check the choices,

Choice D is correct.

Question No 11 - 14

Cloth washmen	A	B	F	D	G	H
Six Days	1	2	3	4	5	6

Rules

Rule I, B = 2/6

Rule II, $A_1 = F_4$

Rule III, $A_1 = H_5$

Rule IV, $(G \neq 3) \rightarrow (A = 3)$

Rule V, $A_4 \rightarrow D_5$

Rule VI, $B_2 \rightarrow G_5$

Rule VII, $H_6 \rightarrow D_4$

Question No 11

1st Step	Check Rule I	B, C is wrong
2nd Step	Check Rule IV	E is wrong
3rd Step	Check Rule VI	A is wrong

So, Choice D is correct.

Question No 12

	1	2	3	4	5	6
As question						D
As Rule I, B = 2/6, D = 6, so B = 2		B				D
As Rule VI, $B_2 \rightarrow G_5$, so G = 5		B			G	D
As Rule IV, $(G \neq 3) \rightarrow (A = 3)$, So A =3		B	A		G	D
As Rule II, $A_1 = F_4$, F ≠ 4 because A ≠ 1						
Then F = 1 and remaining	F	B	A	H	G	D

So, Choice A is correct.

Question No 13

	1	2	3	4	5	6
As question	A					
As Rule II & III, $A_1 = C_4$ and $A_1 = H_5$, so	A			F	H	
As Rule IV, $(G \neq 3) \rightarrow (A = 3)$, now A ≠ 3,						
Then G = 3,	A		G	F	H	
As Rule VI, $B_2 \rightarrow G_5$, now G ≠ 5, so B ≠ 2						
Then B = 6 as Rule I, B = 2/6	A		G	F	H	B
As remaining	A	D	G	F	H	B

Choice C is correct.

Question No 22

	1	2	3	4	5	6
As question and Rule VI, $B_2 \rightarrow G_5$,						
B = 2 & G = 5		B			G	
As Rule IV, $(G \neq 3) \rightarrow (A = 3)$, so A = 3		B	A		G	
Then remaining,						
Option 1	H	B	A	F	G	D
Option 2	F	B	A	H	G	D
Option 3	F	B	A	D	G	H

Then H can wash at 1, 4 and 6 position. Check the choice,

Choice E is correct.

Question No 15 - 18

Lines	J	N	O	P	S	T	U	W	X	V	Z

Rules

Rule I, J = N + O – V
Rule II, T = P + S
Rule III, W = T – U
Rule IV, X = W – J
Rule V, V = 5% of T
Rule VI, Z = X /2

Question No 115

Rules	Formula	Lines must be Know
Rule V	5% of T	T
Rule II,	T = P + S	T, P, S

Check the choices,
Choice D is correct.

Question No 16

Rules	Formula	Lines must be Know
Rule I	J = N + O – V	N, O, V
Rule V	V = 5% of T	N, O, V, T
Rule II	T = P + S	N, O, V, T, P, S

Check the choices,
Choice A is correct

Question No 17

Rules	Formula	To Drive the Lines
Rule I	J = N + O – V	J
Rule IV	X = W – J	J, X
Rule VI	Z = X/2	J, X, Z

Check the choices,
Choice D is correct.

Question No 18

N = unknown

Rules	Formula	Line cannot be Drive
Rule I	J = N + O – V	J
Rule IV	X = W – J	J, X
Rule VI	Z = X/2	J, X, Z

So, Lines J, X, Z cannot be calculated.
Choices A, C, D, E are wrong because they contain one of line J, X, Z
Choice B is correct.

Test No 19

Question No 1 - 5

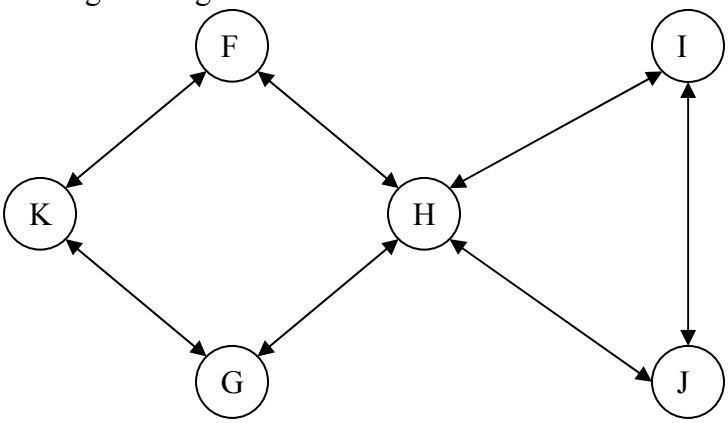
Cities F G H I J K

Rule I, H $\Leftrightarrow$ F, G, I, J

Rule II, I $\Leftrightarrow$ J

Rule III, K $\Leftrightarrow$ F, G

Draw the following diagram according to the Rules, and then give the answer by looking the diagram.



Question No 1

Choice C is correct, as G and K are neighbor with each other.

Question No 2

Choice	Possibility
A	May be but not necessary
B	Not true as I = K and G $\Leftrightarrow$ K
C	Not true because two neighbor city
D	Not true because G can be same color of J and F
E	Yes it must be true

So, Choice E is correct.

Question No 3

Same color can be of K with H, I and J

Same color can be of G with F, I and J

Check the choices,

Choice A is correct.

Question No 4

As K is only city which is not connected with H, so H and K can be same color

So, Choice E is correct.

Question No 5

Same color can be
H and K
K with I and J
F with G, I and J
G with F, I, J

Choice	Possibility
A	Not true because K and H can be same color
B	Not true, because K with H, I, and J can be same color
C	Not true, because F and G can be same color
D	Yes, H, I and J must be different color
E	Not true because K and J may be same color, D is correct.

Question No 6 - 11

Task	N	Q	R	T	U	V	W	Y
Evening and Night Day			1	2	3			

At most two tasks can perform in Evening or Night

Rules

Rule I,	Q = 2
Rule II,	W = evening
Rule III,	R = U
Rule IV,	Q > U, V
Rule V,	V < W, Y

Question No 6

1st Task	Check Rule I	B is wrong
2nd Task	Check Rule II	C is wrong
3rd Task	Check Rule III	D is wrong
4th Task	Check Rule V	A is wrong

So, Choice E is correct.

Question No 7

As Rule IV & III, U < Q and U + R, then R < Q

Choice B is correct.

Question No 8

As Rule V, V < W, if V perform in first day evening, then W can also perform in second day evening as Rule II,

So Choice C is correct.

Question No 9

	First Day		Second Day		Third Day	
	E	N	E	N	E	N
As question and Rule I,			Q			
As Rule IV, U, V < Q, so	U	V	Q			
As Rule III, U = R, so	U, R	V	Q			

Check the choices,

Choice B is correct.

Question No 10

	First Day		Second Day		Third Day	
	E	N	E	N	E	N
As question and Rule I,	N, T		Q			
As Rule IV, U, V < Q, so	N, T	U,	V, Q			
As Rule III, R = U, so	N, T	U, R	V, Q			
Remaining as Rule II,	N, T	U, R	V, Q	Y	W	

Choice D is correct.

Question No 11

Choice	
A	No, N can be completed on first day, there is no restriction
B	No, as Rule III & IV, R can be completed on first day
C	No, T can be completed on first day, there is no restriction
D	No, as Rule IV, V can be completed on first day
E	Yes, see below for detail

	First Day		Second Day		Third Day	
	E	N	E	N	E	N
As Rule I, Q = 2, so			Q			
As Rule IV, U, V < Q, so	U	V	Q			
As Rule III,	U, R	V	Q			
As Rule V & II, W > V, so W must on second day evening	U, R	V	Q, W			
then as Rule V, Y > V, then Y must be at second night	U, R	V	Q, W	Y		

Choice E is correct.

Question No 12 - 15

Labels	L	M	N	O	P	Q
Setting	Green		Blue			

Rules

Rule I, $N_G \rightarrow (M_B \,\&\, Q_B)$

Rule II, $L_B \neq Q_B$

Rule III, $P_B \rightarrow Q_B$

Rule IV, $M_G \neq O_G$

Question No 12

	Green		Blue		
As question,	Q				
As Rule III, $P_B \rightarrow Q_B$, now Q is green					
So, P must be green	Q	P			

So, Choice E is correct.

Question No 13

	Green			Blue		
As question,	O			L		
As Rule IV, $M_G \neq O_G$, so M is blue	O			L	M	
As Rule II, $L_B \neq Q_B$, so Q is green	O	Q		L	M	
As Rule III, $P_B \rightarrow Q_B$, now Q is green						
So, P must be green,	O	Q	P	L	M	
As Rule I, $N_G \rightarrow (M_B \,\&\, Q_B)$						
Now Q is green, so N is Blue	O	Q	P	L	M	N

Check the choices,

Choice C is correct.

Question No 14

For maximizing blue N must be blue because if N is blue then M and Q also blue. And P also must be blue for maximizing blue, see the options

	Green	Blue
Option 1,	L, O	P, N, Q, M
Option 2,	P, L, O	N, M, Q

Check the choices,

Choice A is correct.

Question No 15

Take each choice and then determine the setting of other labels by using the related Rules.

Choice	Label	Determine Label Setting
A	M is green	O must be blue, by Rule IV,
B	N is green	M & Q must blue as Rule I,
C	O is green	M must be blue as Rule IV,
D	M is blue	
E	P is blue	Q must be blue as Rule III,

So, Choice D is correct.

Question No 16 - 19

Colors G M O P B R W Y

Rules

Rule I, No color can chosen for more than one
Rule II, 1 and 4 pictures will be partly paint with two color
Rule III, G → B, can they must partly paint
Rule IV, P ≠ O, cannot be used as partly
Rule V, R = W + 1

Question No 16

	1	2	3	4	5	6
As question,		Y		B		
As Rule III & Rule II,		Y		B G		
As Rule V, R = W + 1, then		Y		B, G	W	R
Remaining as Rule IV, P ≠ O	M, O/P	Y	P/O	B, G		

Check the choices,
Choice B is correct.

Question No 17

	1	2	3	4	5	6
As question					O	
As Rule II, 1 & 4 are partly paint, so R & W ≠ 1 & 4 as Rule V, R = W +1, Now W must be 2, because W ≠ 6		W	R		O	
As Rule III, G → B, so	G, B	W	R		O	

Check the choices,
Choice D is correct.

Question No 18

	1	2	3	4	5	6
As question and Rule V,					W	R
As Rule III, G → B, so	G, B				W	R
Remaining as Rule IV,						
Option 1	G, B	Y/O	O/Y	P, M	W	R
Option 2	G, B	P/M	M/P	Y, O	W	R

Check the choices,
Choice E is correct.

Question No 19

	Color can be chose for picture 2
	G, M, O, P, B, R, W, Y
As Rule II, G and B are partly, so they Cannot be chosen for picture 2, so	M, O, P, R, W, Y
As Rule V, R = W + 1, so R ≠ 2, then	M, O, P, W, Y

Check the choices,
Choice E is correct.

Test No 20

Question No 1 - 5

Marketing Member	J	K	L	M
Finance Member	W	X	Y	Z

Rules

Rule I, Exactly two Market member and two Finances
Rule II, J/K must be select but not both
Rule III, W → L
Rule IV, Y ≠ K

Question No 1

	Committee member			
	Market		Finance	
As question and Rule III,	L		W	
As Rule II, J/K must select, and then M cannot be select	L	J/K	W	

So, Choice B is correct.

Question No 2

	Committee member			
	Market		Finance	
As question, then remaining Finance			W	Y
As Rule III, W → L, so	L		W	Y
As Rule II & Rule IV, Y ≠ K then J must be select	L	J	W	Y

Check the choices,
Choice B is correct.

Question No 3

Add "K" in each choice and check the Rules,

1st Step	Check Rule II	A is wrong
2nd Step	Check Rule III	E is wrong
3rd Step	Check Rule IV	D is wrong
4th Step	Check Rule I	B is wrong

So, Choice C is correct.

Question No 4

	Committee member			
	Market		Finance	
As question,	K	M	X	
As Rule II, J cannot be select,				
As Rule III, W → L, then W cannot be select,				
As Rule IV, K ≠ Y, then Y cannot select,				
As Rule I, L cannot be select,				
Then remaining Finance	K	M	X	Z

So, Choice E is correct

Question No 5

	Committee member			
	Market		Finance	
As question,			Y	
As Rule II & Rule IV, J/K must select and K ≠ Y, then	J		Y	
Then remaining Market M must be select	J	M	Y	
As Rule III, W → L, while L not select as question, so W cannot be select,				
Then remaining	J	M	Y	X/Z

Check the choices,
Choice E is correct, because Z may be select.

Question No 6 – 11

Locations	F	K	L	G	H	M	N
Ground Floor	F	K	L				
First floor	G	H	M	N			

Exactly Three Location Search

Rules

Rule I, Three location must be neither all first floor nor all ground Floor
Rule II, H $\rightarrow$ F
Rule III, M not search $\rightarrow$ Not search G
Rule IV, K $\neq$ L
Rule V, L or N must be search but not both

Question No 6

1st Step	Check Rule V	A, D is wrong
2nd Step	Check Rule IV	C is wrong
3rd Step	Check Rule I	E is wrong

So, Choice B is correct.

Question No 7 Search Location

As question, K
Then as Rule IV, L cannot be search.
As Rule V, then N must be select, K N
Check the choice,
Choice E is correct.

Question No 8

Add M in each choice and then check the Rules.

1st Step	Check Rule V	A, B is wrong
2nd Step	Check Rule IV	D is wrong
3rd Step	Check Rule II	C is wrong

So, Choice E is correct.

Question No 9 Search Location

As question, G
Rule III, now G search then M also search, so M G
As Rule V, L or N must select,
As Rule I, N cannot be select, so L must select M G L
Choice D is correct.

Question No 10 Search Location

As question, K
Then N must be select as second question Rule, K N
As Rule II, H cannot be search
As Rule III, G cannot be search
Then remaining M must be select. K N M
Choice A is correct.

Question No 11

Search Location

As question and Rule V, then N must be search N
Now add N in each choice and then check the Rules

1st Step	Check Rule II	D, B is wrong
2nd Step	Check Rule III	A, E is wrong

So, Choice C is correct.

Question No 12 - 14

Consecutive Rooms		1	2	3	4	5	6	7
Rules								
Rule I,	after painting		2 P	2 B	2 G	1 S		
Rule II,	G = G ± 1							
Rule III,	B ≠ B ± 1							
Rule IV,	S ≠ P ± 1							
Rule V,	P = 3							

Question No 12

	1	2	3	4	5	6	7
As question & Rule V, P = 3		G	P				
As Rule I, G = G ± 1, so G must be at first	G	G	P				
Choice A is correct.							

Question No 13

	1	2	3	4	5	6	7
As question & Rule V, P = 3			P		P		
As Rule I, G = G ± 1, then							
Option 1	G	G	P		P		
Option 2			P		P	G	G
As Rule IV, S ≠ P ± 1, so S ≠ 4 then							
Option 1	G	G	P		P		S
Option 2	S		P		P	G	G
As remaining,							
Option 1	G	G	P	B	P	B	S
Option 2	S	B	P	B	P	G	G
Check the choices,							
Choice E is correct.							

Question No 14

P = 4, and G = P ± 1

	1	2	3	4	5	6	7
As question & Rule V, P = 3			P	P			
As question G = P ± 1, then							
Option 1	G	G	P	P			
Option 2			P	P	G	G	
As Rule IV, S ≠ P ± 1, then							
Option 1 I	G	G	P	P		S	
Option 1 II	G	G	P	P			S
Option 2 I	S		P	P	G	G	
Option 2 II			P	P	G	G	S
Then as Rule III, B ≠ B ± 1, so option 1II							
And option 2 II is wrong, then							
Option 1	G	G	P	P	B	S	B
Option 2	S	B	P	P	G	G	B
Check the choices,							
Choice E is correct.							

Question No 15 - 18

Buildings T U V W X Y

Normal Letter Special Letter

Rules

Rule I, X, Y < V

Rule II, U, T < Y

Rule III, if other Rules fulfill then Special Letter should be delivery before than Normal Letter.

New Rule

As Rule I & II, Y < V and U, T < Y, then sequence

U, T < Y < V then V can be deliver Letter at fifth or sixth not before it.

Question No 15

As Rule I & II, there is no building which must be receive Letter before T, so T must be first as Rule III,

Then Choice A, B, E is wrong.

Choice C is wrong as Rule I

So, Choice D is correct.

Question No 16

Special Letter U, Y, V	1	2	3	4	5	6
As Rule I& II, U has no restriction for Receiving Letter, so U must be first	U					
As Rule II, Y must receive Letter after T, so	U	T	Y			
As Rule I, V must receive Letter after X, so	U	T	Y	X	V	
Remaining	U	T	Y	X	V	W

Check the choices,

Choice C is correct.

Question No 17

Sequence of buildings	W	X	U	T	Y	V

For Y, there is no restriction to receive Letter before W, but W receive Letter before Y, so it must be Special Letter.

For Y, there is no restriction to receive Letter before X, but X receive Letter before Y, so it must be Special Letter.

U and T receive Letter before Y, as Rule II, so U and T not receive Special Letter.

Then Choice B is correct.

Question No 18

Put each choice in sequence and put W after receiving Special Letter and for choice, W = 4 that choice will be correct answer.

Choice	Sequence					
	1	2	3	4	5	6
A	T	W	U	Y	X	V
B	U	W	T	Y	X	V
C	U	T	Y	X	V	W
D	X	W	U	T	Y	V
E	U	T	Y	W	X	V

So, Choice E is correct, as W = 4

Test No 21

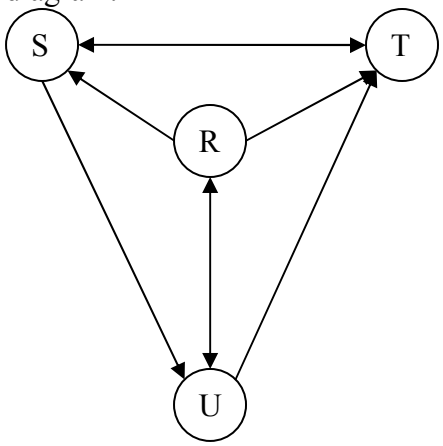
Question No 1 - 5

Computers R S T U

One Way R → S and T S → U U → T

Two Way R ↔ U S ↔ T

Draw the following diagram according to the Rules, and then give the answer by looking the diagram.



Question No 1

Directly from T to S,

So Choice A is correct.

Question No 2

As only U → T and U → R

So, R and T

Choice C is correct.

Question No 3

Option 1 S → U → R → S

Option 2 S → U → R → T → S

Check the choices,

Choice D is correct.

Question No 4

Longest path is

T → S → U → R

Check the choices,

Choice B is correct.

Question No 5

As longest path is from T to R

So, it must be made in path of T to R.

Choice B is correct.

Question No 6 - 11

Female adults	I	L	N			
Male adults	Q	R	T	U	V	W

Group 1, consist of four adults Group 2, consist of 5 adults

Rules

Rule I, Group 1 consist exactly two female adults
Rule II, R = U
Rule III, I ≠ Q
Rule IV, T ≠ V
Rule V, (R = V) ≠ N

Question No 6

1st Step	Check Rule II	E is wrong
2nd Step	Check Rule III	C is wrong
3rd Step	Check Rule IV	A is wrong
4th Step	Check Rule V	B is wrong

So, Choice D is correct.

Question No 7

	Group 1	Group 2
As question		W, U
As Rule II,		W, U, R

Check the choices
Then Choices, A, B, D is wrong
Choice E is wrong as Rule IV
So, Choice C is correct.

Question No 8

	Group 1	Group 2
As question		N, R
As Rule II, R = U, so		N, R, U
As Rule I, remaining adults	I, L	N, R, U
V ≠ group 2, because then Rule V not fulfill,		
So, V = group 1	I, L, V	N, R, U
As Rule IV, T ≠ V, so	I, L, V	N, R, U, T
Remaining as Rule III	I, L, V, W	N, R, U, T, Q

Check the choices,
Choice C is correct.

Question No 9

	Group 1	Group 2
As question	I, T, W	
Then as Rule II, R = U must join group 2	I, T ,W	R, U
As Rule IV, T ≠ V, so	I, T, W	R, U, V
As Rule V, (R = V) ≠ N, so N = group 1	I, T, W, N	R, U, V
Remaining as Rule I,	I, T, W, N,	R, U, V, Q, L

Check the choices,
Choice A is correct

Question No 10

	Group 1	Group 2
As question	L, N	
As Rule I, I = group 2	L, N	I
As Rule III, Q ≠ I, so	L, N, Q	I
Remaining as Rule IV,	L, N, Q, T/V	I, W, R, U, V/T

Check the choices,
Choice A is correct.

Question No 11

Take each choice option and make group by other Rules

Choice	True/False	Group 1	Group 2
A	True	I, T, L, W	R, U, V, Q, N
B	True	L, N, T, Q	I, R, U, V, W
C	True	N, V, L, Q	I, R, U, T, W
D	False	Q, R	
As Rule II,		Q, R, U	
As Rule III, I ≠ Q, so		Q, R, U	I
As Rule I, so		Q, R, U, L, N	I

It is wrong because Group 1 consist exactly four adults
So, Choice D is correct.

Question No12 - 15

Detectives F G H I J M

Rules

Rule I, F/H must be selected

Rule II, G/J must be selected

Rule III, G ≠ H, J

Question No 12

1st Step	Check Rule I	E is wrong
2nd Step	Check Rule II	B is wrong
3rd Step	Check Rule III	A, D is wrong

So, Choice C is correct.

Question No 13

As Rule I, F or H must be selected, so one detective will be	F/H
As Rule II, G or J must be selected, so second detective will be	F/H, G/J
Only third detective remaining, then I and M both cannot be select.	F/H, G/J, I/M

Check the choices,

Choice D is correct.

Question No 14

	Selected detective
As question,	H
As Rule III, G ≠ H, so G cannot be select, then as Rule II,	
J must be selected,	H J

So, Choice D is correct.

Question No 15

	Selected detective
As question and Rule II, then G must be selected	G
As Rule I & III, F/H and G ≠ H, then F must be selected	G F
Remaining	G F I/M

Check the choices,

Choice A is correct.

Question No 16 - 19

Points S T U W X Y

Rules

Rule I, $Y < S, X$

Rule II, $T > S, W$

Rule III, $U \neq W \pm 1$

New Rule

As Rule I & II, $Y < S$ and $S < T$ then sequence

$Y < S < T$, then $Y < T$

Question No 16

As U, have no restriction to come first, so U will be first

As Rule I, $Y < X$, so X have restriction, then sequence, U, Y, X

Only choice D contain above sequence, so remaining choices will be wrong.

Choice D is correct.

Question No 17

	1	2	3	4	5	6
As Rule I, $Y < X$, so X will be second	Y	X				
As Rule II, $T > S, W$, T will be fifth	Y	X	S/W	W/S	T	
Remaining	Y	X	S/W	W/S	T	U

Check the choices,

Choice E is correct.

Question No 18

	1	2	3	4	5	6
As W have no restriction to come first, so	W					
As Rule II, $T > S$, so S clear before T and						
As Rule I, $Y < S$ then sequence,	W	Y	S	T		
Remaining	W	Y	S	T	X/U	U/X

Check the choices,

Choice E is correct.

Question No 19

As W have no restriction, so W will be first, then — Choice D & E is wrong

As Rule III, $U \neq W \pm 1$, so — Choice B is wrong

As Rule I, $Y < S, X$, so — Choice A is wrong

Then Choice C is correct.

Test No 22

Question No 1 - 5

Students F G H I J K

Rules

Rule I, $K \neq H \pm 1$

Rule II, $J \neq F \pm 1$

Rule III, $I = F \pm 1$

Question No 1

As Rule III, I = F ± 1, so F will sit on right sight of I

So, Choice A is correct.

Question No 2

1st Step Check Rule I E, A, B is wrong

2nd Step Check Rule II C is wrong

So, Choice D is correct.

Question No 3

	1	2	3	4	5	6	1
As question	F	H					F
As Rule III, I = F ± 1, so I = 6	F	H				I	F
As Rule I, K cannot sit with H							
Then G and J can sit with H, so	F	H	G/J			I	F

Check the choices,

Choice B is correct.

Question No 4

	1	2	3	4	5	6	1
As question and Rule III	K	F	I	J			K
Then remaining as Rule I, $K \neq H \pm 1$,so	K	F	I	J	H	G	K

Choice C is correct.

Question No 5

Let K = 1, then G = K + 3= 1 + 3 = 4

	1	2	3	4	5	6	1
As question	K			G			K
As Rule I, $H \neq 2, 6$, then H = 3, 5							
Option 1	K		H	G			K
Option 2	K			G	H		K
Remaining as Rule III							
Option 1	K	J	H	G	I	F	K
Option 2	K	I	F	G	H	J	K

Check the choices,

Choice D is correct.

Question No 6 - 11

Cities	O	F	G	J	R	S	T	M

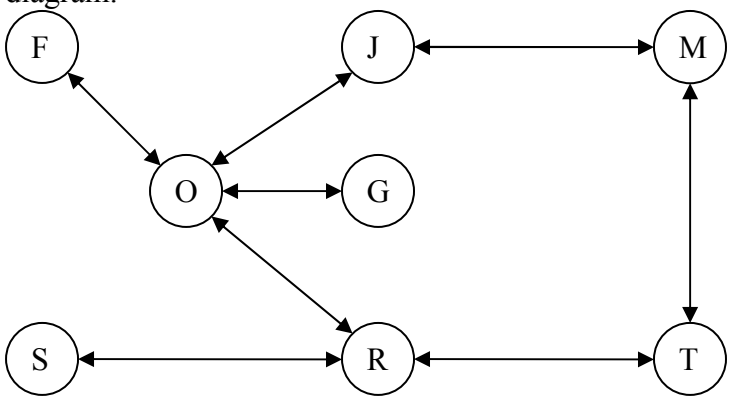
Rule I, O ⇔ F, G, J, R

Rule II, R ⇔ S, T

Rule III, J ⇔ M

Rule IV, M ⇔ T

Draw the following diagram according to the Rules, and then give the answer by looking the diagram.



Question No 6

Choice	Routes	Intermediates
A	F →O →J →M	2
B	F →O →R →T	2
C	G →O →R →T	2
D	M →T →R →S	2
E	R →T →M	1

So, Choice E is correct.

Question No 7

Choice	Routes	Oxa Intermediates
A	F →O →G	Yes
B	J →M →T	No
C	M →T →R →S	No
D	R →T	No
E	S →R →T	No

So, Choice A is correct.

Question No 8

As question J → F, G and T

Shortest route J →M →T →R →O →G →O →F

O is exactly twice

So, Choice C is correct.

Question No 9

Then Route will be,

S →R →T →M →J →O →F

Check the choices,

Choice E is correct.

Question No 10

As question, R → J, F, S

Shortest Route

Option 1 R → S → R → O → J → O → F

Option 2 R → S → R → O → F → O → J

Check the choices,

Choice D is correct.

Question No 11

Make change in diagram according to the question.

Choice	Routes	"G" Intermediates
A	F → O → G → T → M → J	Yes
B	F → O → R → S	No
C	J → M → T → R → S	No
D	R → T → M	No
E	T → M → J	No

So, Choice A is correct.

Question No 12 - 15

Towns	F	G	H	I	J	K	L
Vans		W	X	Y	J		
Van W		F → G → H → I → J → F					
Van X		G → K → G					
Van Y		H → J → H					
Van J		J → L → I					

Question No 12

Choice	Route	Vans	Intermediates
A	F→G→K	W & X	1
B	G→H→I→J→K	W	3
C	H→I→J→F	W	2
D	I→J→H	W & Y	1
E	J→H	Y	0

So, Choice E is correct.

Question No 13

As K is only stop of Van X, G → K → G, so it must travel through G,
Choice B is correct.

Question No 14

Route	Vans	Intermediates
F→G→H→J	W & Y at H	2
F→G→H→I→J	W	3

So, minimum intermediates are two,
Choice B is correct.

Question No 15

Route	L → I → J → H		
Vans	J	W	Y

Check the choices,
So, Choice E is correct.

Question No 16 - 19

Companies R S T U V W X

Group 1 Group 2

Rules

Rule I, Each group must include at least three companies

Rule II, No company can be in both group

Rule III, R = X

Rule IV, $T_1 \rightarrow W_1$

Rule V, $U_2 \rightarrow S_1$

Question No 16

1st Step	Check Rule III	A, D is wrong
2nd Step	Check Rule IV	No error
3rd Step	Check Rule V	B, E is wrong

So, Choice C is correct.

Question No 17

	Group 1	Group 2
As question		S, W
As Rule V, $U_2 \rightarrow S_1$, now S = 2 , so U ≠ 2	U	S, W
As Rule IV, $T_1 \rightarrow W_1$, now W = 2, so T ≠ 1	U	S, W, T
As Rule III, R = X, both cannot join group 2, as Rule I, so R & X will be in group 1	U, R, X	S, W, T

Check the choices,

Choice E is correct.

Question No 18

Take each choice requirement and complete the groups by Rules,

Choice	True/False	Group 1	Group 2
A	True	W, U, S, V	R, T, X
B	True	S, U, R, X	T, W, V
C	True	W, X, R, S	T, U, V
D	False	R, V, W	
	As Rule III,	R, V, W, X	
	Remaining Wrong by Rule V	R, V, W, X	T, U, S

So, Choice D is correct answer

Question No 19

	Group 1	Group 2
As question,		R
As Rule III, R = X, so		R, X
As Rule IV, $T_1 \rightarrow W_1$, then W must be in group 1, Because if W = 2 then T = 1, and then Rule IV, Not follow,	W	

Choice E is correct.

Test No 23

Question No 1 - 5

Workers F G H I J K

Rules

Rule I, there must be exact two workers watching the suspect at all time
Rule II, H or I must be worker for car but not both
Rule III, G or K must be worker for train but not both
Rule IV, K → F
Rule V, F ≠ I

Question No 1

1st Step Check Rule II A,C, D is wrong
2nd Step Check Rule V B is wrong
So, Choice E is correct.

Question No 2

As Rule III, then K must be worker for train
And as Rule IV, K → F, so two workers K and F
So, B is correct.

Question No 3

	Workers			
	For Car		For Train	
As question,	J		J	
For car, the second worker must be H or I as Rule II,	J	I/H		
For train, the second worker must be G or K as Rule III,	J	I/H	J	G/K

Then K cannot work as Rule IV, K → F, because then F
Must work then total number of worker will increase more
Then two which is wrong as Rule I, so
So, Choice E is correct.

Question No 4

	Workers	
As question,	F	
As Rule V, F ≠ I, so I cannot be used, then as Rule II, H must be used,	F	H

So, Choice B is correct.

Question No 5

	Worker Pair	
	First	Second
As worker pair used for car is same that is used for train.		
For car, as Rule II, H or I must be used	H/I	
For train, as Rule III, G or K must be used	H/I	G/K

Then worker pair consist one of H or I and one of G or K
As Rule IV, K → F, so K cannot be used in that pair,

then G must be used in that pair.	H/I	G

So, Choice A is correct.

Question No 6 - 11

Workers	F	G	H	I	J	K	L
Three Vans	Van 1		Van 2			Van 3	

Rules

Rule I, at least two worker must be assign to Van-1
Rule II, at least three worker must be assign to Van-3
Rule III, J = V-3
Rule IV, $F_1 = I_1$
Rule V, G = V-2
Rule VI, L ≠ V-3

Question No 6

1st Step	Check Rule V	C, E is wrong
2nd Step	Check Rule III	B is wrong
3rd Step	Check Rule VI	A is wrong

So, Choice D is correct.

Question No 7

	Van 1		Van 2		Van 3	
As question, and Rule V & Rule III,			I	G	J	
As Rule VI, L ≠ V-3, then L must join V-1	L		I	G	J	
As I = V-2, so F ≠ V-1 as Rule IV,	L		I	G	J	F
Remaining	L	H/K	I	G	J	F K/H

Check the choices,
Choice E is correct.

Question No 8

	Van 1	Van 2	Van 3
As question, and Rule V & Rule III,	F, L	G	J
As Rule IV, then I must join Van-1	F, L, I	G	J
Remaining as Rule II,	F, L, I	G	J, H, K

Check the choices,
Choice A is correct

Question No 9

	Van 1	Van 2	Van 3
As question, and Rule V & Rule III,	I, L	G	J
Then remaining all Worker can join Van-3,	I, L	G	J, F, H, K

Check the choices,
Choice D is correct.

Question No 10

Total Workers	=	Van-1	+	Van-2	+	Van-3
7	=	3 (As question)		?		3 (As Rule II)

Van- 2 = One Worker and that worker is G as Rule V,
So, Choice E is correct.

Question No 11

As I can be assign to any van, then V-2 which have limit of maximum two Workers, and I also can join V-2, then V-2 have only one Worker

	Van 1		Van 2	Van 3
As Rule V & Rule III,			G	J
As Rule VI, L ≠ J, and as question				
L≠ V-2, so L = Van- 1	L		G	J
As question I can join any Van,				
so F≠ V-1, as Rule IV, and then F = V-3	L		G	J, F
Remaining H & K,	L	H/K	G	J, F, K/H

These are Workers before assign I and I can assign to any Van

Now check the choices,

Choice E is correct.

Question No 12 - 15

Flower	F	G	H	I	J	K

Rules

Rule I, F, G, I and J must be in pair of kind, next to each other
Rule II, K and I must be separate at least three other flower.
Rule III, Not plant more than two flower of one kind

Question No 12

Choices, A, B, C, D plants must be plant in pair as Rule I, so these choices are wrong, Then Choice E is correct.

Question No 13

As Rule I, the second flower must be F in order to make pair of F flower.
So, Choice A is correct.

Question No 14

1st Step	Check Rule I	C, D is wrong
2nd Step	Check Rule II	A, E is wrong

So, Choice B is correct.

Question No 15

As Rule II, K and I must be separate at least three other flower.
Now "I" is at 4th than K must be at 8th.
So, Choice E is correct.

Question No 16 - 19

Tasks	R	S	T	U
Rules				
Rule I,	R < S			
Rule II,		T < U		

Question No 16

1st Step Check Rule I E is wrong

So, Choice E is correct answer.

Question No 17

Choice	Relation	Analysis	Comments
A	R < T	As Rule I & II, R < S & T < U	No relation
B	R < U	As Rule I & II, R < S & T < U	No relation
C	S < T	As Rule I & II, R < S & T < U	No relation
D	T < S	As Rule I & II, R < S & T < U	No relation
E	T < U	it is Rule II	Yes

So, Choice E is correct.

Question No 18

Take each choice relation and put tasks in order according to Rules

Choice	Relation	Task Ordering 1	Task Ordering 2	Decision
A	R < T	R, S, T, U	R, T, S, U	No
B	R < U	R, T, U, S	T, R, U, S	No
C	T < S	T, R, U, S	T, U, R, S	No
D	U < R	T, U, R, S		Yes
E	U < S	R, T, U, S	T, U, R, S	No

So, Choice D is correct.

Question No 19

Choice	Relations	Analysis	Conflict
A	R < T & U < R	then U < R < T	Yes with Rule II
B	R < U & T < S	R < T < U < S	No conflict

So, Choice B is correct.

Test No 24

Question No 1 - 5

Marketing Executive R S T
Finance Executive U V W
Exactly three member board

Rules

Rule I, at least one member from Marketing and at least one member from Finance
Rule II, $R \neq S$
Rule III, $T = V$
Rule IV, $U \rightarrow W$

Question No 1

1st Step Check Rule III A, B, E is wrong
2nd Step Check Rule IV C is wrong
So, Choice D is correct.

Question No 2

	Option 1			Option 2		
As question and Rule II, then	R			S		
And remaining Marketing Executive,	R	T		S	T	
As Rule III,	R	T	V	S	T	V

So, Choice D is correct.

Question No 3

	Option 1		Option 2		
As question and Rule IV, then	U	W	V	W	
As Rule III, T = V, so	U	W	V	W	T

Check the choices,
Choice E is correct.

Question No 4

	Board		
As question,	R	W	
As Rule II, $R \neq S$, so S cannot be appoint,			
As Rule III, T = V, so both T and V cannot be appoint			
Then remaining	R	W	U

So, Choice B is correct.

Question No 5

Take each choice and make the board according to the Rules

Choice	True/False	Option 1			Option 2
A	True	R			
	As Rule II, remaining	R	T		
	As Rule III, T = V, so	R	T	V	
	As Rule IV, U cannot be In board, so	R	T	V	W

Choice A is correct answer, as If R appoint then W must be appoint.

Question No 6 - 11

Months	Jan	Feb	Mar	Apr	May	Jun	Jul
Owner	J	K	L	M	N	O	P

Rules

Rule I, O = L + 1
Rule II, M = P + 1
Rule III, J < O
Rule IV, N < L

New Rule

New Rule I, as Rule I & III, O = L + 1 and J < O, so J < L, O
New Rule II, as Rule I and Rule IV, O = L + 1 and N < L, so N < O, L

Question No 6

1st Step	Check Rule I	A, B is wrong
2nd Step	Check Rule II	E is wrong
3rd Step	Check New Rule II	D is wrong

So, Choice C is correct.

Question No 7

Choice A is correct, as New Rule I,

Question No 8

	Jan	Feb	Mar	Apr	May	Jun	Jul
As question,		J					
As New Rule I, J < L, O, so L & O,							
Cannot be sale to J,							
As Rule II, M = P + 1, then M & P,							
Cannot be sale to J.							
Remaining N only can sale to J, so	N	J					

So, Choice C is correct.

Question No 9

As New Rule I, J < L, O, then J < Jun
As New Rule II, N , L, O, then N < Jun
Check the choices,
Choice A is correct.

Question No 10

	Jan	Feb	Mar	Apr	May	Jun	Jul
As question,			K	L			
As Rule I,			K	L	O		
As New Rule I & II, J, N < L, O, so	N/J	J/N	K	L	O		
Remaining as Rule II, M = P + 1,	N/J	J/N	K	L	O	P	M

So, Choice E is correct.

Question No 11

	Jan	Feb	Mar	Apr	May	Jun	Jul
As question,							O
As Rule I,						L	O
Then as Rule II, M = P + 1, so							
P ≠ May.							

So, Choice E is correct.

Question No 12 - 15

Soap Brands	F	G	H	I	J
Shampoo Brands	W	X	Y	Z	

Three Brands from Soap and Two Brands from Shampoo

Rules

Rule I, $F \rightarrow Z$

Rule II, $H \rightarrow (G, W)$

Rule III, $I = J$

Rule IV, $X \neq (Y, Z)$

New Rule

As Rule I & IV, $F \rightarrow Z$ and $X \neq (Y, Z)$, so $F \neq X$

Question No 12

1st Step	Check Rule I	B is wrong
2nd Step	Check Rule II	D is wrong
3rd Step	Check Rule III	C is wrong
4th Step	Check Rule IV	E is wrong

So, Choice A is correct.

Question No 13

	1	2	3	4	5
As question	F	Y			
As Rule I, $F \rightarrow Z$, so	F	Y	Z		
H cannot display as Rule II					
X cannot display as Rule IV					
W cannot display as two other Shampoo					
Are display					
Remaining as Rule III	F	Y	Z	I	J

So, Choice A is correct.

Question No 14

	Brands cannot be display
As Y & Z display then other Shampoo Brands W & X	
Cannot display, so	X, W
As W not display, so H cannot display as Rule II,	X, W, H

Then three brands of soap must be display from four
Available brands as F, G, I, J
Then as Rule III, I and J must be select in each case.
Check the choices,
Choice D is correct.

Question No 15

	Brands Display
Then other three Soap Brands must be display,	F, G, H
As Rule I, Z must display	F, G, H, Z
As Rule II, W must display	F, G, H, Z, W

Check the choices,
Choice D is correct.

Question No 16 - 19

Boys		F	G	H	
Girls		J	K	M	N

Rules

Rule I, $G = H$
Rule II, $J \neq K$
Rule III, $G \neq M$

Question No 16

1st Step	Check Rule I	B, D is wrong
2nd Step	Check Rule II	E is wrong
3rd Step	Check Rule III	A is wrong

So, Choice C is correct.

Question No 17

As Rule I, G = H, then G must attend the workshop
Then as Rule III, $G \neq M$, so M cannot attend the workshop.
So, Choice D is correct

Question No 18

For this question look on the few sex workers that is boy which are three F, G, H
Then two of boy must select then G and H must select as Rule I,
So, Choice B is correct.

Question No 19

	Musicians
As question,	F, J
As Rule II, K cannot be select.	
The remaining musician are G, H, M and N, from	
Two Musicians must select, then G and H may select	
As Rule I,	
Option 1	F, J, G, H
Option 2	F, J, N, M

Check the choices,
Choice E is correct.

Test No 25

Question No 1 - 6

Contestant R S T U V W
Highest to lowest

Rules

Rule I, R < S
Rule II, V < T & U
Rule III, W = T – 2
Rule IV, R = 3/4

Question No 1

1st Step Check Rule IV B is wrong
2nd Step Check Rule I C is wrong
3rd Step Check Rule II A, E is wrong
So, Choice D is correct.

Question No 2

	1	2	3	4	5	6
As question and Rule III,	W		T			
As Rule IV, then R = 4	W		T	R		
As Rule II, V < T, so	W	V	T	R		
Remaining	W	V	T	R	U/S	S/U

Check the choices,
Choice A is correct.

Question No 3

	1	2	3	4	5	6
As question			R			
As Rule III, W = T – 2, then there are following two options possible						
Option 1		W	R	T		
Option 2			R	W		T
As Rule I, R < S, so						
Option 1		W	R	T		S
Option 2			R	W	S	T
Remaining as Rule II,						
Option 1	V	W	R	T	U	S
Option 2	V	U	R	W	S	T

Check the choices,
Choice A is correct.

Question No 4

	1	2	3	4	5	6
As question and Rule IV,			W	R		
As Rule III,			W	R	T	
As Rule I, R < S			W	R	T	S
Remaining as Rule II, V < U	V	U	W	R	T	S

So, option III and IV are true.
Then Choice D is correct.

Question No 5

	1	2	3	4	5	6
As question**,** then T ≠ 1, 2 as						
Rule III, so			T	R		
As Rule III,	W		T	R		
As Rule II, V < T, so	W	V	T	R		
Remaining	W	V	T	R	S/U	U/S

Check the choices,
Choice A, B, C, D are must true,
Then Choice E is correct answer.

Question No 6

	1	2	3	4	5	6
As question	W	V				
As Rule III,	W	V	T	R		
Then as Rule IV, R = 4	W	V	T	R		
Remaining as	W	V	T	R	U/S	S/U

Check the choices,
Choice A is correct.

Question No 7 -12

Student	O	P	Q	R	S	T	U	V	W
Committee	A		B		C				

Rules

Rule I, Committee A have one more member than does committee B
Rule II, A ≠ (O, P, Q)
Rule III, B ≠ (R, S, T)
Rule IV, C ≠ (U, V, W)

Question No 7

B = 2 member
Then X = 3 member as Rule I,
Then remaining C = 4
So, Choice B is correct.

Question No 8

Let greatest number of member of committee C = C
Number of committee X = X
Number of committee B = B
Then X + B + C = 9
As Rule I, (X= B + 1), so (B + 1) + B + C = 9
Then C = 9 – 1 – 2Y
C will be greatest when B will be minimum, so put B = 1
Then C = 9 – 1 – 2(1) = 6
So, Choice D is correct.

Question No 9

	X	B	C
As question,		W	
As Rule IV, U & V cannot join C,			
Then they must joint committee X, so	U, V	W	

Check the choices,
Choice E is correct.

Question No 10

C = 0, then X + B = 9
As Rule I, X = B + 1, so (B + 1) + B = 9
Then B = 4

	X	B
	1, 2, 3, 4, 5	1, 2, 3, 4
As Rule II, X ≠ (O, P, Q), so they join B,		O, P, Q
As Rule III, B ≠ (R, S, T), so they join X,	R, S, T	O, P, Q

Check the choices,
Choice C is correct.

Question No 11

As B = 3, then X = 4 and C = 2

	X	B	C
	1, 2, 3, 4	1, 2, 3	1, 2
As question,		U, V, Q	
Then as Rule II, X ≠ (O, P), so join C		U, V, Q	O, P
As remaining,	R, S, T, W	U, V, Q	O, P

Check the choices,
Choice A is correct.

Question No 12

Check Rule IV, A, E is wrong

C must have even number of member, as drive from Rule I, so C, D is wrong

So, Choice B is correct.

Question No 13 - 16

Chemical	U	V	W
Test	R	S	H

Rules

Rule I, If R is +ve then sample contain U but not V, otherwise R is –ve
Rule II, If S is +ve then sample contain U or V or both, otherwise S is –ve
Rule III, If H is +ve then sample contain W, otherwise H is –ve

New Rule

As Rule II, If S is +ve then sample contain U or V or both, otherwise S is –ve.
It means if S is –ve then sample must contain W only

Question No 13

As New Rule, it must contain W only,
So, Choice B is correct.

Question No 14

As Rule I, test R is +ve then it contain U otherwise it not contain U, then definitely that sample contain V and then second sample contain U.
So, by test R, we can determine which sample contain U or V
Test S and H, cannot be use to determine the both sample.
So, Choice A is correct.

Question No 15

As Rule III, if H is +ve, then it only show that the sample not contain W, and contain U or V. then after there is only one test needed, so h performed first.
So, Choice C is correct.

Question No 16

	Chemical can be
	U, V, W
As H is –ve so, W not contain, so	U, V
As R is –ve, so U not contain, so	V
As S is +ve, then remaining V must contain,	V

So, Choice C is correct.

Question No 17 – 20

Group of Funding Judge	K	L	M
Group of Qualification Judge	W	R	S

Rules

Rule I, Each group member cost vote either in support or opposite
Rule II, Groups all member not cost vote as same another
Rule III, $K \neq R$
Rule IV, $M = W$

Question No 17

1st Step	Check Rule II	A is wrong
2nd Step	Check Rule III	C, E is wrong
3rd Step	Check Rule IV	B is wrong

So, Choice D is correct.

Question No 18

As Rule IV, M = W, so they may be in support, check the possibility, first assume that they are in opposition and then fulfill other Rules and account the total votes in support

	Support	Opposition
Let M & W are in opposition,		M, W
Then as Rule III, $K \neq R$, so	K	M, W, R
Let remaining is in support,	K, L, S	M, W, R

This project will be rejected.
Then M and W must in support.
Check the choices,
So, Choice C is correct.

Question No 19

	Support	Opposition
As question, let they are in support	K, L	
As Rule III, $K \neq R$, so	K, L	R
As Rule II, M must be in opposition	K, L	R, M
As Rule IV, M = W	K, L	R, M, W

Check the choices,
Choice D is correct.

Question No 20

	Support	Opposition
As question, and as Rule III,	R	K
As Rule IV, M = W, now let they are in Support,	R, W, M	K
Then L and S will be in opposition as tie,	R, W, M	K, L, S
Now let M and W are in opposition, then	R	K, W, M
Then L and S must be in support, so	R, L, S	K, W, M

Check the choices,
Choice D is correct.