Name: [redacted] Application No: [redacted]

Challenges regarding Answer Key

Candidate Details

Application Number :	[redacted]	Roll Number :	[redacted]
Candidate's Name :	[redacted]	Date of Birth :	04-11-2005
Father's Name :	[redacted]	Mother's Name :	[redacted]

Claimed Answer Key List

Paper	Question Type	QuestionID	Correct Option(s)/ Answers	Option(s) ID for Challenge				
B TECH - Physics Section A	Objective	7155051531	7155054591	7155054591	7155054592	7155054593	7155054594	None of These
B TECH - Physics Section A	Objective	7155051532	7155054596	7155054595	7155054596	7155054597	7155054598	None of These
B TECH - Physics Section A	Objective	7155051533	7155054599	7155054599	7155054600	7155054601	7155054602	None of These
B TECH - Physics Section A	Objective	7155051534	7155054606	7155054603	7155054604	7155054605	7155054606	None of These
B TECH - Physics Section A	Objective	7155051535	7155054609	7155054607	7155054608	7155054609	7155054610	None of These
B TECH - Physics Section A	Objective	7155051536	7155054613	7155054611	7155054612	7155054613	7155054614	None of These
B TECH - Physics Section A	Objective	7155051537	7155054615	7155054615	7155054616	7155054617	7155054618	None of These
B TECH - Physics Section A	Objective	7155051538	7155054622	7155054619	7155054620	7155054621	7155054622	None of These
B TECH - Physics Section A	Objective	7155051539	7155054626	7155054623	7155054624	7155054625	7155054626	None of These
B TECH - Physics Section A	Objective	7155051540	7155054628	7155054627	7155054628	7155054629	7155054630	None of These
B TECH - Physics Section A	Objective	7155051541	7155054632	7155054631	7155054632	7155054633	7155054634	None of These
B TECH - Physics Section A	Objective	7155051542	7155054637	7155054635	7155054636	7155054637	7155054638	None of These
B TECH - Physics Section A	Objective	7155051543	7155054641	7155054639	7155054640	7155054641	7155054642	None of These
B TECH - Physics Section A	Objective	7155051544	7155054646	7155054643	7155054644	7155054645	7155054646	None of These
B TECH - Physics Section A	Objective	7155051545	7155054648	7155054647	7155054648	7155054649	7155054650	None of These
B TECH - Physics Section A	Objective	7155051546	7155054652	7155054651	7155054652	7155054653	7155054654	None of These
B TECH - Physics Section A	Objective	7155051547	7155054655	7155054655	7155054656	7155054657	7155054658	None of These
B TECH - Physics Section A	Objective	7155051548	7155054659	7155054659	7155054660	7155054661	7155054662	None of These
B TECH - Physics Section A	Objective	7155051549	7155054664	7155054663	7155054664	7155054665	7155054666	None of These
B TECH - Physics Section A	Objective	7155051550	7155054667	7155054667	7155054668	7155054669	7155054670	None of These
B TECH - Physics Section B	Numerical	7155051551	1					
B TECH - Physics Section B	Numerical	7155051552	7					
B TECH - Physics Section B	Numerical	7155051553	32					
B TECH - Physics Section B	Numerical	7155051554	100					
B TECH - Physics Section B	Numerical	7155051555	105					
B TECH - Physics Section B	Numerical	7155051556	44					
B TECH - Physics Section B	Numerical	7155051557	9					
B TECH - Physics Section B	Numerical	7155051558	54					
B TECH - Physics Section B	Numerical	7155051559	3					
B TECH - Physics Section B	Numerical	7155051560	6					
B TECH - Chemistry Section A	Objective	7155051561	7155054683	7155054681	7155054682	7155054683	7155054684	None of These
B TECH - Chemistry Section A	Objective	7155051562	7155054688	7155054685	7155054686	7155054687	7155054688	None of These
B TECH - Chemistry Section A	Objective	7155051563	7155054692	7155054689	7155054690	7155054691	7155054692	None of These
B TECH - Chemistry Section A	Objective	7155051564	7155054695	7155054693	7155054694	7155054695	7155054696	None of These
B TECH - Chemistry Section A	Objective	7155051565	7155054700	7155054697	7155054698	7155054699	7155054700	None of These
B TECH - Chemistry Section A	Objective	7155051566	7155054702	7155054701	7155054702	7155054703	7155054704	None of These
B TECH - Chemistry Section A	Objective	7155051567	7155054705	7155054705	7155054706	7155054707	7155054708	None of These
B TECH - Chemistry Section A	Objective	7155051568	7155054712	7155054709	7155054710	7155054711	7155054712	None of These
B TECH - Chemistry Section A	Objective	7155051569	7155054714	7155054713	7155054714	7155054715	7155054716	None of These
B TECH - Chemistry Section A	Objective	7155051570	7155054720	7155054717	7155054718	7155054719	7155054720	None of These
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B TECH - Chemistry Section A	Objective	7155051572	7155054727	7155054725	7155054726	7155054727	7155054728	None of These
B TECH - Chemistry Section A	Objective	7155051573	7155054730	7155054729	7155054730	7155054731	7155054732	None of These
B TECH - Chemistry Section A	Objective	7155051574	7155054735	7155054733	7155054734	7155054735	7155054736	None of These
B TECH - Chemistry Section A	Objective	7155051575	7155054739	7155054737	7155054738	7155054739	7155054740	None of These
B TECH - Chemistry Section A	Objective	7155051576	7155054741	7155054741	7155054742	7155054743	7155054744	None of These
B TECH - Chemistry Section A	Objective	7155051577	7155054745	7155054745	7155054746	7155054747	7155054748	None of These
B TECH - Chemistry Section A	Objective	7155051578	7155054749	7155054749	7155054750	7155054751	7155054752	None of These
B TECH - Chemistry Section A	Objective	7155051579	7155054755	7155054753	7155054754	7155054755	7155054756	None of These
B TECH - Chemistry Section A	Objective	7155051580	7155054759	7155054757	7155054758	7155054759	7155054760	None of These
B TECH - Chemistry Section B	Numerical	7155051581	5					
B TECH - Chemistry Section B	Numerical	7155051582	2					
B TECH - Chemistry Section B	Numerical	7155051583	2					
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B TECH - Chemistry Section B	Numerical	7155051585	314					
B TECH - Chemistry Section B	Numerical	7155051586	85					
B TECH - Chemistry Section B	Numerical	7155051587	2					
B TECH - Chemistry Section B	Numerical	7155051588	8					
B TECH - Chemistry Section B	Numerical	7155051589	8					
B TECH - Chemistry Section B	Numerical	7155051590	3					
B TECH - Mathematics Section A	Objective	7155051591	7155054772	7155054771	7155054772	7155054773	7155054774	None of These
B TECH - Mathematics Section A	Objective	7155051592	7155054775	7155054775	7155054776	7155054777	7155054778	None of These
B TECH - Mathematics Section A	Objective	7155051593	7155054779	7155054779	7155054780	7155054781	7155054782	None of These
B TECH - Mathematics Section A	Objective	7155051594	7155054785	7155054783	7155054784	7155054785	7155054786	None of These
B TECH - Mathematics Section A	Objective	7155051595	7155054789	7155054787	7155054788	7155054789	7155054790	None of These
B TECH - Mathematics Section A	Objective	7155051596	7155054794	7155054791	7155054792	7155054793	7155054794	None of These
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B TECH - Mathematics Section A	Objective	7155051598	7155054800	7155054799	7155054800	7155054801	7155054802	None of These
B TECH - Mathematics Section A	Objective	7155051599	7155054805	7155054803	7155054804	7155054805	7155054806	None of These
B TECH - Mathematics Section A	Objective	7155051600	7155054807	7155054807	7155054808	7155054809	7155054810	None of These
B TECH - Mathematics Section A	Objective	7155051601	7155054813	7155054811	7155054812	7155054813	7155054814	None of These
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B TECH - Mathematics Section A	Objective	7155051605	7155054828	7155054827	7155054828	7155054829	7155054830	None of These
B TECH - Mathematics Section A	Objective	7155051606	7155054832	7155054831	7155054832	7155054833	7155054834	None of These
B TECH - Mathematics Section A	Objective	7155051607	7155054836	7155054835	7155054836	7155054837	7155054838	None of These
B TECH - Mathematics Section A	Objective	7155051608	7155054840	7155054839	7155054840	7155054841	7155054842	None of These
B TECH - Mathematics Section A	Objective	7155051609	7155054845	7155054843	7155054844	7155054845	7155054846	None of These
B TECH - Mathematics Section A	Objective	7155051610	7155054848	7155054847	7155054848	7155054849	7155054850	None of These
B TECH - Mathematics Section B	Numerical	7155051611	13					
B TECH - Mathematics Section B	Numerical	7155051612	405					
B TECH - Mathematics Section B	Numerical	7155051613	5					
B TECH - Mathematics Section B	Numerical	7155051614	36					
B TECH - Mathematics Section B	Numerical	7155051615	27					
B TECH - Mathematics Section B	Numerical	7155051616	8					
B TECH - Mathematics Section B	Numerical	7155051617	432					
B TECH - Mathematics Section B	Numerical	7155051618	2					
B TECH - Mathematics Section B	Numerical	7155051619	122					
B TECH - Mathematics Section B	Numerical	7155051620	384					

Claimed Answer Key ListUpload Document

Claimed Answer Key ListUpload Document: Choose file | No file chosen

In case the candidates want to submit documents in support of challenge of answer key, they should upload the PDF file.

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एनआईसी National Informatics Centre

JEE 2023 Session-1 24th Jan to 1st Feb 2023

Application No	230310133390
Candidate Name	YASH GANESH JADHAV
Roll No	MR16001433
Test Date	24/01/2023
Test Time	3:00 PM - 6:00 PM
Subject	B TECH

Section : **Physics Section A**

Q.1 A body of mass 200g is tied to a spring of spring constant 12.5 N/m, while the other end of spring is fixed at point O. If the body moves about O in a circular path on a smooth horizontal surface with constant angular speed 5 rad/s. Then the ratio of extension in the spring to its natural length will be :

Options
1. 2:3
2. 1:2
3. 1:1
4. 2:5

Question Type : **MCQ**
Question ID : **7155051535**
Option 1 ID : **7155054609**
Option 2 ID : **7155054608**
Option 3 ID : **7155054607**
Option 4 ID : **7155054610**
Status : **Answered**
Chosen Option : **1**

Q.2 Match List I with List II

LIST I		LIST II	
A.	AM Broadcast	I.	88–108 MHz
B.	FM Broadcast	II.	540–1600 kHz
C.	Television	III.	3.7–4.2 GHz
D.	Satellite Communication	IV.	54MH_z – 890MHz

Choose the correct answer from the options given below:

Options
1. A-II, B-I, C-IV, D-III
2. A-IV, B-III, C-I, D-II
3. A-I, B-III, C-II, D-IV
4. A-II, B-III, C-I, D-IV

Question Type : **MCQ**
Question ID : **7155051540**
Option 1 ID : **7155054628**
Option 2 ID : **7155054630**
Option 3 ID : **7155054627**
Option 4 ID : **7155054629**
Status : **Not Answered**
Chosen Option : **--**

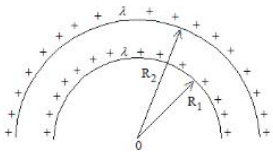
Q.3 The frequency (v) of an oscillating liquid drop may depend upon radius (r) of the drop, density (ρ) of liquid and the surface tension (s) of the liquid as : $v = r^a \rho^b s^c$. The values of a, b and c respectively are

Options

1. $\left(\frac{3}{2}, \frac{1}{2}, -\frac{1}{2}\right)$
2. $\left(-\frac{3}{2}, \frac{1}{2}, \frac{1}{2}\right)$
3. $\left(-\frac{3}{2}, -\frac{1}{2}, \frac{1}{2}\right)$
4. $\left(\frac{3}{2}, -\frac{1}{2}, \frac{1}{2}\right)$

Question Type : **MCQ**
Question ID : **7155051531**
Option 1 ID : **7155054594**
Option 2 ID : **7155054593**
Option 3 ID : **7155054591**
Option 4 ID : **7155054592**
Status : **Not Answered**
Chosen Option : **--**

Q.4 The electric potential at the centre of two concentric half rings of radii R_1 and R_2, having same linear charge density λ is :



Options

1. $\frac{\lambda}{4\epsilon_0}$
2. $\frac{2\lambda}{\epsilon_0}$
3. $\frac{\lambda}{2\epsilon_0}$
4. $\frac{\lambda}{\epsilon_0}$

Question Type : **MCQ**
Question ID : **7155051541**
Option 1 ID : **7155054633**
Option 2 ID : **7155054634**
Option 3 ID : **7155054632**
Option 4 ID : **7155054631**
Status : **Not Answered**
Chosen Option : **--**

Q.5 If the distance of the earth from Sun is 1.5×10^6 km. Then the distance of an imaginary planet from Sun, if its period of revolution is 2.83 years is :

Options

1. 3×10^6 km
2. 3×10^7 km
3. 6×10^7 km
4. 6×10^6 km

Question Type : **MCQ**
Question ID : **7155051537**
Option 1 ID : **7155054615**
Option 2 ID : **7155054617**
Option 3 ID : **7155054618**
Option 4 ID : **7155054616**
Status : **Not Answered**
Chosen Option : **--**

Q.6 Let γ_1 be the ratio of molar specific heat at constant pressure and molar specific heat at constant volume of a monoatomic gas and γ_2 be the similar ratio of diatomic gas. Considering the diatomic gas molecule as a rigid rotator, the ratio, $\frac{\gamma_1}{\gamma_2}$ is :

Options

1. $\frac{21}{25}$
2. $\frac{35}{27}$
3. $\frac{27}{35}$
4. $\frac{25}{21}$

Question Type : **MCQ**
Question ID : **7155051550**
Option 1 ID : **7155054668**
Option 2 ID : **7155054669**
Option 3 ID : **7155054670**
Option 4 ID : **7155054667**
Status : **Not Answered**
Chosen Option : **--**

Q.7 Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R.**

Assertion A : A pendulum clock when taken to Mount Everest becomes fast.

Reason R : The value of g (acceleration due to gravity) is less at Mount Everest than its value on the surface of earth.

In the light of the above statements, choose the ***most appropriate*** answer from the options given below

Options
1. A is correct but **R** is not correct
2. Both **A** and **R** are correct but **R** is **NOT** the correct explanation of **A**
3. **A** is not correct but **R** is correct
4. Both **A** and **R** are correct and **R** is the correct explanation of **A**

Question Type : **MCQ**
Question ID : **7155051539**
Option 1 ID : **7155054625**
Option 2 ID : **7155054624**
Option 3 ID : **7155054626**
Option 4 ID : **7155054623**
Status : **Not Answered**
Chosen Option : **--**

Q.8 Given below are two statements:

Statement I : Acceleration due to earth's gravity decreases as you go 'up' or 'down' from earth's surface.

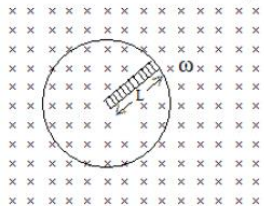
Statement II : Acceleration due to earth's gravity is same at a height 'h' and depth 'd' from earth's surface, if h = d.

In the light of above statements, choose the ***most appropriate*** answer form the options given below

Options
1. Statement I is incorrect but statement II is correct
2. Both Statement I and Statement II are incorrect
3. Both Statement I and II are correct
4. Statement I is correct but statement II is incorrect

Question Type : **MCQ**
Question ID : **7155051536**
Option 1 ID : **7155054614**
Option 2 ID : **7155054612**
Option 3 ID : **7155054611**
Option 4 ID : **7155054613**
Status : **Answered**
Chosen Option : **4**

Q.9 A metallic rod of length 'L' is rotated with an angular speed of 'ω' normal to a uniform magnetic field 'B' about an axis passing through one end of rod as shown in figure. The induced emf will be :



Options

1. $\frac{1}{2}B^2L^2\omega$
2. $\frac{1}{4}BL^2\omega$
3. $\frac{1}{4}B^2L\omega$
4. $\frac{1}{2}BL^2\omega$

Question Type : **MCQ**
Question ID : **7155051538**
Option 1 ID : **7155054620**
Option 2 ID : **7155054619**
Option 3 ID : **7155054621**
Option 4 ID : **7155054622**
Status : **Not Answered**
Chosen Option : **--**

Q.10 If two vectors $\vec{P} = \hat{i} + 2m\hat{j} + m\hat{k}$ and $\vec{Q} = 4\hat{i} - 2\hat{j} + m\hat{k}$ are perpendicular to each other.Then, the value of m will be :

Options

1. 1
2. 2
3. 3
4. -1

Question Type : **MCQ**
Question ID : **7155051532**
Option 1 ID : **7155054597**
Option 2 ID : **7155054596**
Option 3 ID : **7155054595**
Option 4 ID : **7155054598**
Status : **Answered**
Chosen Option : **2**

Q.11 The electric field and magnetic field components of an electromagnetic wave going through vacuum is described by

$E_x = E_o \sin(kz - \omega t)$

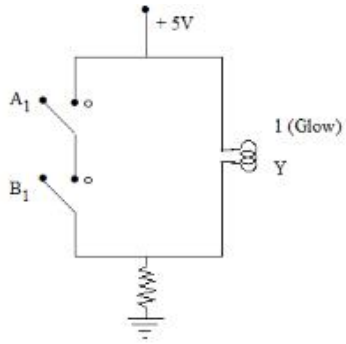
$B_y = B_o \sin(kz - \omega t)$

Then the correct relation between E_o and B_o is given by

Options
1. $E_0 = kB_o$
2. $E_oB_o = \omega k$
3. $\omega E_o = kB_o$
4. $kE_o = \omega B_o$

Question Type : **MCQ**
Question ID : **7155051545**
Option 1 ID : **7155054647**
Option 2 ID : **7155054650**
Option 3 ID : **7155054649**
Option 4 ID : **7155054648**
Status : **Not Answered**
Chosen Option : **--**

Q.12



The logic gate equivalent to the given circuit diagram is :

Options
1. OR
2. NAND
3. NOR
4. AND

Question Type : **MCQ**
Question ID : **7155051549**
Option 1 ID : **7155054665**
Option 2 ID : **7155054664**
Option 3 ID : **7155054666**
Option 4 ID : **7155054663**
Status : **Answered**
Chosen Option : **4**

Q.13 An α-particle, a proton and an electron have the same kinetic energy. Which one of the following is correct in case of their de-Broglie wavelength:

Options
1. $\lambda_\alpha > \lambda_p > \lambda_e$
2. $\lambda_\alpha = \lambda_p = \lambda_e$
3. $\lambda_\alpha < \lambda_p < \lambda_e$
4. $\lambda_\alpha > \lambda_p < \lambda_e$

Question Type : **MCQ**
Question ID : **7155051543**
Option 1 ID : **7155054640**
Option 2 ID : **7155054639**
Option 3 ID : **7155054641**
Option 4 ID : **7155054642**
Status : **Answered**
Chosen Option : **3**

Q.14 When a beam of white light is allowed to pass through convex lens parallel to principal axis, the different colours of light converge at different point on the principle axis after refraction. This is called :

Options
1. Chromatic aberration
2. Polarisation
3. Spherical aberration
4. Scattering

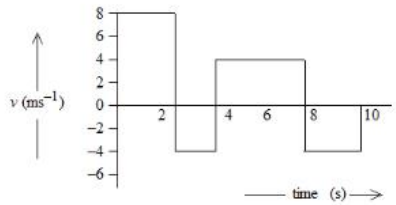
Question Type : **MCQ**
Question ID : **7155051544**
Option 1 ID : **7155054646**
Option 2 ID : **7155054644**
Option 3 ID : **7155054643**
Option 4 ID : **7155054645**
Status : **Answered**
Chosen Option : **4**

Q.15 A long solenoid is formed by winding 70 turns cm^{-1}. If 2.0 A current flows, then the magnetic field produced inside the solenoid is_____ ($\mu_o = 4\pi \times 10^{-7}$ TmA^{-1})

Options
1. 88×10^{-4} T
2. 176×10^{-4} T
3. 352×10^{-4} T
4. 1232×10^{-4} T

Question Type : **MCQ**
Question ID : **7155051546**
Option 1 ID : **7155054651**
Option 2 ID : **7155054652**
Option 3 ID : **7155054653**
Option 4 ID : **7155054654**
Status : **Not Answered**
Chosen Option : **--**

Q.16 The velocity time graph of a body moving in a straight line is shown in figure.



The ratio of displacement to distance travelled by the body in time 0 to 10s is :

Options
1. 1:4
2. 1:3
3. 1:2
4. 1:1

Question Type : **MCQ**
Question ID : **7155051534**
Option 1 ID : **7155054605**
Option 2 ID : **7155054606**
Option 3 ID : **7155054604**
Option 4 ID : **7155054603**
Status : **Answered**
Chosen Option : **2**

Q.17 A photon is emitted in transition from n = 4 to n = 1 level in hydrogen atom. The corresponding wavelength for this transition is (given, $h = 4 \times 10^{-15}$ eVs) :

Options
1. 94.1 nm
2. 99.3 nm
3. 974 nm
4. 941 nm

Question Type : **MCQ**
Question ID : **7155051542**
Option 1 ID : **7155054637**
Option 2 ID : **7155054635**
Option 3 ID : **7155054636**
Option 4 ID : **7155054638**
Status : **Not Answered**
Chosen Option : **--**

Q.18 Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : Steel is used in the construction of buildings and bridges.

Reason R : Steel is more elastic and its elastic limit is high.

In the light of above statements, choose the most appropriate answer from the options given below

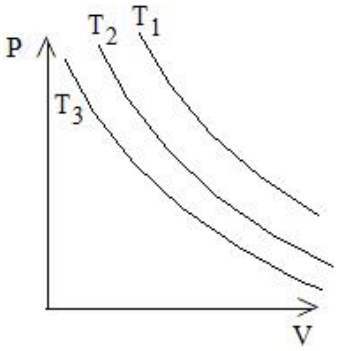
Options
1. A is correct but **R** is not correct
2. A is not correct but **R** is correct
3. Both **A** and **R** are correct but **R** is **NOT** the correct explanation of **A**
4. Both **A** and **R** are correct and **R** is the correct explanation of **A**

Question Type : **MCQ**
Question ID : **7155051548**
Option 1 ID : **7155054661**
Option 2 ID : **7155054662**
Option 3 ID : **7155054660**
Option 4 ID : **7155054659**
Status : **Answered**
Chosen Option : **4**

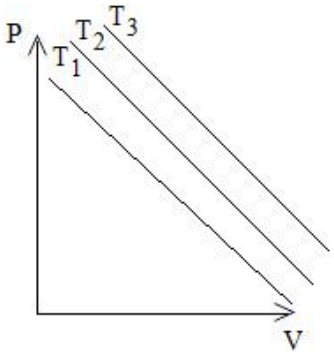
Q.19 In an Isothermal change, the change in pressure and volume of a gas can be represented for three different temperature; $T_3 > T_2 > T_1$ as :

Options

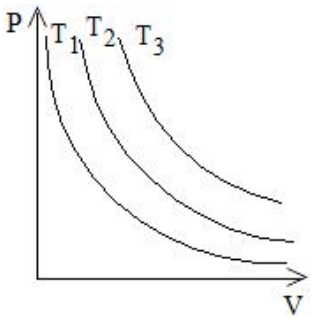
1.



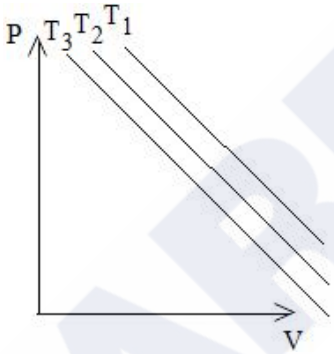
2.



3.



4.



Question Type : **MCQ**
Question ID : **7155051533**
Option 1 ID : **7155054600**
Option 2 ID : **7155054601**
Option 3 ID : **7155054599**
Option 4 ID : **7155054602**
Status : **Answered**
Chosen Option : **3**

CAREERS360

Q.20 A cell of emf 90 V is connected across series combination of two resistors each of 100Ω resistance. A voltmeter of resistance 400Ω is used to measure the potential difference across each resistor. The reading of the voltmeter will be :

Options
1. 45 V
2. 80 V
3. 90 V
4. 40 V

Question Type : **MCQ**
Question ID : **7155051547**
Option 1 ID : **7155054656**
Option 2 ID : **7155054657**
Option 3 ID : **7155054658**
Option 4 ID : **7155054655**
Status : **Not Answered**
Chosen Option : **--**

Section : **Physics Section B**

Q.21 A single turn current loop in the shape of a right angle triangle with sides 5 cm, 12 cm, 13 cm is carrying a current of 2 A. The loop is in a uniform magnetic field of magnitude 0.75 T whose direction is parallel to the current in the 13 cm side of the loop. The magnitude of the magnetic force on the 5 cm side will be $\frac{x}{130}$ N. The value of x is _____.

Given **--**
Answer :

Question Type : **SA**
Question ID : **7155051557**
Status : **Not Answered**

Q.22 A Spherical ball of radius 1mm and density 10.5 g /cc is dropped in glycerine of coefficient of viscosity 9.8 poise and density 1.5 g /cc. Viscous force on the ball when it attains constant velocity is 3696×10^{-x} N. The value of x is (Given, g = 9.8 m/s^2 and $\pi = \frac{22}{7}$)

Given **--**
Answer :

Question Type : **SA**
Question ID : **7155051552**
Status : **Not Answered**

Q.23 A convex lens of refractive index 1.5 and focal length 18cm in air is immersed in water. The change in focal length of the lens will be _____ cm.

(Given refractive index of water = $\frac{4}{3}$)

Given **--**
Answer :

Question Type : **SA**
Question ID : **7155051558**
Status : **Not Answered**

Q.24 A body of mass 1kg begins to move under the action of a time dependent force $\vec{F} = \left(t\hat{i} + 3t^2\hat{j}\right)$ N, where $\hat{i}$ and $\hat{j}$ are the unit vectors along x and y axis. The power developed by above force, at the time t = 2s, will be _____ W.

Given **--**
Answer :

Question Type : **SA**
Question ID : **7155051554**
Status : **Not Answered**

Q.25 The energy released per fission of nucleus of ^{240}X is 200 MeV. The energy released if all the atoms in 120g of pure ^{240}X undergo fission is _____ $\times 10^{25}$ MeV.
(Given $N_A = 6 \times 10^{23}$)

Given **--**
Answer :

Question Type : **SA**
Question ID : **7155051560**
Status : **Not Answered**

Q.26 A parallel plate capacitor with air between the plate has a capacitance of 15pF. The separation between the plate becomes twice and the space between them is filled with a medium of dielectric constant 3.5. Then the capacitance becomes $\frac{x}{4}$ pF. The value of x is _____.

Given **105**
Answer :

Question Type : **SA**
Question ID : **7155051555**
Status : **Answered**

Q.27 A mass m attached to free end of a spring executes SHM with a period of 1s. If the mass is increased by 3 kg the period of oscillation increases by one second, the value of mass m is _____ kg.

Given **1**
Answer :

Question Type : **SA**
Question ID : **7155051551**
Status : **Answered**

Q.28 A uniform solid cylinder with radius R and length L has moment of inertia I_1, about the axis of the cylinder. A concentric solid cylinder of radius $R' = \frac{R}{2}$ and length $L' = \frac{L}{2}$ is carved out of the original cylinder. If I_2 is the moment of inertia of the carved out portion of the cylinder then $\frac{I_1}{I_2}$ =_____.

(Both I_1 and I_2 are about the axis of the cylinder)

Given **32**
Answer :

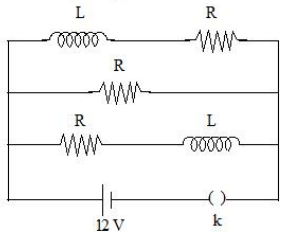
Question Type : **SA**
Question ID : **7155051553**
Status : **Answered**

Q.29 If a copper wire is stretched to increase its length by 20%. The percentage increase in resistance of the wire is _____ %.

Given **24**
Answer :

Question Type : **SA**
Question ID : **7155051556**
Status : **Answered**

Q.30 Three identical resistors with resistance R = 12Ω and two identical inductors with self inductance L = 5 mH are connected to an ideal battery with emf of 12 V as shown in figure. The current through the battery long after the switch has been closed will be _____ A.



Given Answer : --

Question Type : **SA**
Question ID : **7155051559**
Status : **Not Answered**

Section : **Chemistry Section A**

Q.31 Which one amongst the following are good oxidizing agents?

A. Sm^{2+}
B. Ce^{2+}
C. Ce^{4+}
D. Tb^{4+}

Choose the most appropriate answer from the options given below:

Options
1. C and D only
2. A and B only
3. D only
4. C only

Question Type : **MCQ**
Question ID : **7155051569**
Option 1 ID : **7155054714**
Option 2 ID : **7155054713**
Option 3 ID : **7155054716**
Option 4 ID : **7155054715**
Status : **Not Answered**
Chosen Option : **--**

Q.32 Which of the following cannot be explained by crystal field theory?

Options
1. The order of spectrochemical series
2. Magnetic properties of transition metal complexes
3. Colour of metal complexes
4. Stability of metal complexes

Question Type : **MCQ**
Question ID : **7155051570**
Option 1 ID : **7155054718**
Option 2 ID : **7155054717**
Option 3 ID : **7155054719**
Option 4 ID : **7155054720**
Status : **Not Answered**
Chosen Option : **--**

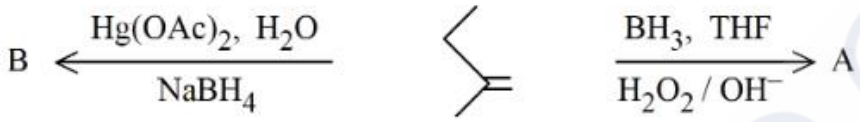
Q.33 $K_2Cr_2O_7$ paper acidified with dilute H_2SO_4 turns green when exposed to

Options

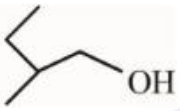
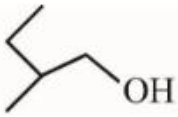
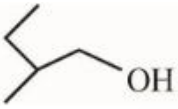
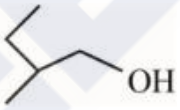
1. Sulphur dioxide
2. Carbon dioxide
3. Sulphur trioxide
4. Hydrogen sulphide

Question Type : **MCQ**
Question ID : **7155051578**
Option 1 ID : **7155054749**
Option 2 ID : **7155054752**
Option 3 ID : **7155054750**
Option 4 ID : **7155054751**
Status : **Not Answered**
Chosen Option : **--**

Q.34 Find out the major products from the following reactions.



Options

1. A =  , B = 
2. A =  , B = 
3. A =  , B = 
4. A =  , B = 

Question Type : **MCQ**
Question ID : **7155051574**
Option 1 ID : **7155054734**
Option 2 ID : **7155054736**
Option 3 ID : **7155054735**
Option 4 ID : **7155054733**
Status : **Answered**
Chosen Option : **1**

Q.35 Identify the correct statements about alkali metals.

A. The order of standard reduction potential ($M^+ | M$) for alkali metal ions is Na > Rb > Li.
B. CsI is highly soluble in water.
C. Lithium carbonate is highly stable to heat.
D. Potassium dissolved in concentrated liquid ammonia is blue in colour and paramagnetic.
E. All the alkali metal hydrides are ionic solids.

Choose the correct answer from the options given below:

Options
1. C and E only
2. A, B, D only
3. A, B and E only
4. A and E only

Question Type : **MCQ**
Question ID : **7155051568**
Option 1 ID : **7155054710**
Option 2 ID : **7155054709**
Option 3 ID : **7155054711**
Option 4 ID : **7155054712**
Status : **Answered**
Chosen Option : **1**

Q.36 In which of the following reactions the hydrogen peroxide acts as a reducing agent?

Options
1. $HOCl + H_2O_2 \rightarrow H_3O^+ + Cl^- + O_2$
2. $Mn^{2+} + H_2O_2 \rightarrow Mn^{4+} + 2OH^-$
3. $2Fe^{2+} + H_2O_2 \rightarrow 2Fe^{3+} + 2OH^-$
4. $PbS + 4\,H_2O_2 \rightarrow PbSO_4 + 4\,H_2O$

Question Type : **MCQ**
Question ID : **7155051566**
Option 1 ID : **7155054702**
Option 2 ID : **7155054703**
Option 3 ID : **7155054704**
Option 4 ID : **7155054701**
Status : **Answered**
Chosen Option : **1**

Q.37 The metal which is extracted by oxidation and subsequent reduction from its ore is:

Options
1. Al
2. Cu
3. Ag
4. Fe

Question Type : **MCQ**
Question ID : **7155051565**
Option 1 ID : **7155054698**
Option 2 ID : **7155054699**
Option 3 ID : **7155054700**
Option 4 ID : **7155054697**
Status : **Not Answered**
Chosen Option : **--**

Q.38 Given below are two statements:

Statement I : Pure Aniline and other arylamines are usually colourless.

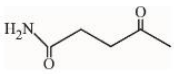
Statement II : Arylamines get coloured on storage due to atmospheric reduction

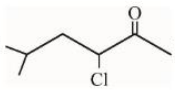
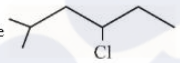
In the light of the above statements, choose the most appropriate answer from the options given below:

Options
1. Both Statement I and Statement II are incorrect
2. Statement I is incorrect but Statement II is correct
3. Statement I is correct but Statement II is incorrect
4. Both Statement I and Statement II are correct

Question Type : **MCQ**
Question ID : **7155051579**
Option 1 ID : **7155054754**
Option 2 ID : **7155054756**
Option 3 ID : **7155054755**
Option 4 ID : **7155054753**
Status : **Not Answered**
Chosen Option : **--**

Q.39 Given below are two statements:

Statement I :  under Clemmensen reduction conditions will give 

Statement II :  under Wolff-Kishner reduction condition will give 

In the light of the above statements, choose the correct answer from the options given below:

Options
1. Statement I is false but Statement II is true
2. Statement I is true but Statement II is false
3. Both Statement I and Statement II are false
4. Both Statement I and Statement II are true

Question Type : **MCQ**
Question ID : **7155051575**
Option 1 ID : **7155054740**
Option 2 ID : **7155054739**
Option 3 ID : **7155054738**
Option 4 ID : **7155054737**
Status : **Not Answered**
Chosen Option : **--**

Q.40 Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Beryllium has less negative value of reduction potential compared to the other alkaline earth metals.

Reason R : Beryllium has large hydration energy due to small size of Be^{2+} but relatively large value of atomization enthalpy

In the light of the above statements, choose the most appropriate answer from the options given below

Options

1. Both A and R are correct and R is the correct explanation of A
2. Both A and R are correct but R is NOT the correct explanation of A
3. A is correct but R is not correct
4. A is not correct but R is correct

Question Type : **MCQ**
Question ID : **7155051567**
Option 1 ID : **7155054705**
Option 2 ID : **7155054706**
Option 3 ID : **7155054707**
Option 4 ID : **7155054708**
Status : **Answered**
Chosen Option : **4**

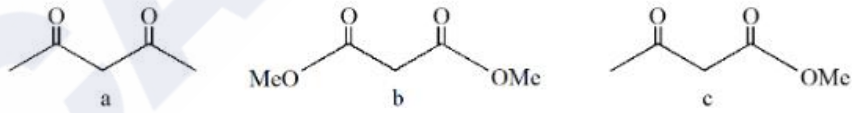
Q.41 Correct statement is:

Options

1. An average human being consumes more food than air
2. An average human being consumes equal amount of food and air
3. An average human being consumes 100 times more air than food
4. An average human being consumes nearly 15 times more air than food

Question Type : **MCQ**
Question ID : **7155051571**
Option 1 ID : **7155054721**
Option 2 ID : **7155054723**
Option 3 ID : **7155054722**
Option 4 ID : **7155054724**
Status : **Not Answered**
Chosen Option : **--**

Q.42 Which will undergo deprotonation most readily in basic medium?



Options

1. a only
2. b only
3. Both a and c
4. c only

Question Type : **MCQ**
Question ID : **7155051576**
Option 1 ID : **7155054741**
Option 2 ID : **7155054742**
Option 3 ID : **7155054744**
Option 4 ID : **7155054743**
Status : **Answered**
Chosen Option : **2**

Q.43 Match List I with List II

LIST I Type		LIST II Name	
A.	Antifertility drug	I.	Norethindrone
B.	Tranquilizer	II.	Meprobomate
C.	Antihistamine	III.	Seldane
D.	Antibiotic	IV.	Ampicillin

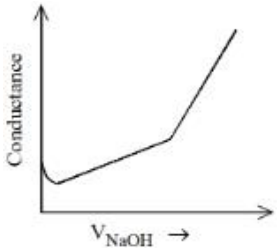
Choose the correct answer from the options given below:

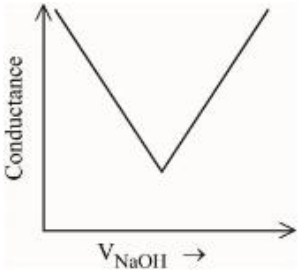
Options
1. A-I, B-III, C-II, D-IV
2. A-I, B-II, C-III, D-IV
3. A-II, B-I, C-III, D-IV
4. A-IV, B-III, C-II, D-I

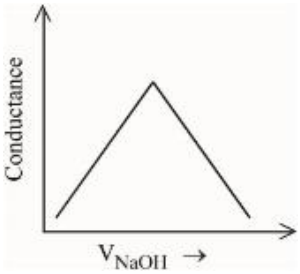
Question Type : **MCQ**
Question ID : **7155051573**
Option 1 ID : **7155054732**
Option 2 ID : **7155054730**
Option 3 ID : **7155054731**
Option 4 ID : **7155054729**
Status : **Answered**
Chosen Option : **1**

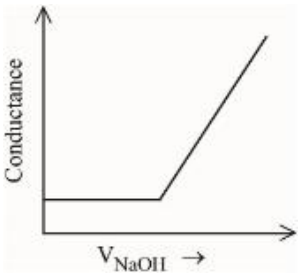
Q.44 Choose the correct representation of conductometric titration of benzoic acid vs sodium hydroxide.

Options

1.


2.


3.


4.


Question Type : **MCQ**
Question ID : **7155051562**
Option 1 ID : **7155054688**
Option 2 ID : **7155054685**
Option 3 ID : **7155054686**
Option 4 ID : **7155054687**
Status : **Not Answered**
Chosen Option : **--**

Q.45 Given below are two statements, one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : Benzene is more stable than hypothetical cyclohexatriene

Reason R : The delocalized π electron cloud is attracted more strongly by nuclei of carbon atoms.

In the light of the above statements, choose the correct answer from the options given below:

Options
1. A is false but R is true
2. Both A and R are correct but R is NOT the correct explanation of A
3. A is true but R is false
4. Both A and R are correct and R is the correct explanation of A

Question Type : **MCQ**
Question ID : **7155051577**
Option 1 ID : **7155054748**
Option 2 ID : **7155054746**
Option 3 ID : **7155054747**
Option 4 ID : **7155054745**
Status : **Answered**
Chosen Option : **2**

Q.46 The number of s-electrons present in an ion with 55 protons in its unipositive state is

Options
1. 10
2. 9
3. 12
4. 8

Question Type : **MCQ**
Question ID : **7155051564**
Option 1 ID : **7155054695**
Option 2 ID : **7155054694**
Option 3 ID : **7155054696**
Option 4 ID : **7155054693**
Status : **Not Answered**
Chosen Option : **--**

Q.47 The hybridization and magnetic behaviour of cobalt ion in $[Co(NH_3)_6]^{3+}$ complex, respectively is

Options
1. sp^3d^2 and paramagnetic
2. d^2sp^3 and paramagnetic
3. d^2sp^3 and diamagnetic
4. sp^3d^2 and diamagnetic

Question Type : **MCQ**
Question ID : **7155051572**
Option 1 ID : **7155054725**
Option 2 ID : **7155054728**
Option 3 ID : **7155054727**
Option 4 ID : **7155054726**
Status : **Answered**
Chosen Option : **1**

Q.48 A student has studied the decomposition of a gas AB_3 at 25°C. He obtained the following data.

p (mm Hg)	50	100	200	400
relative $t_{1/2}$ (s)	4	2	1	0.5

The order of the reaction is

Options
1. 2
2. 0.5
3. 0 (zero)
4. 1

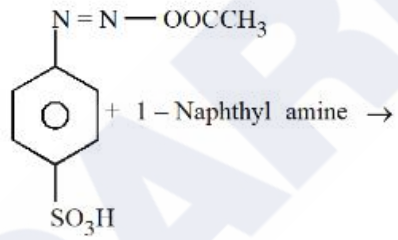
Question Type : **MCQ**
Question ID : **7155051563**
Option 1 ID : **7155054692**
Option 2 ID : **7155054690**
Option 3 ID : **7155054689**
Option 4 ID : **7155054691**
Status : **Not Answered**
Chosen Option : **--**

Q.49 What is the number of unpaired electron(s) in the highest occupied molecular orbital of the following species : N_2 ; N_2^+ ; O_2 ; O_2^+ ?

Options
1. 2, 1, 0, 1
2. 0, 1, 0, 1
3. 0, 1, 2, 1
4. 2, 1, 2, 1

Question Type : **MCQ**
Question ID : **7155051561**
Option 1 ID : **7155054684**
Option 2 ID : **7155054682**
Option 3 ID : **7155054683**
Option 4 ID : **7155054681**
Status : **Answered**
Chosen Option : **3**

Q.50 Choose the correct colour of the product for the following reaction.



Options
1. Blue
2. Red
3. Yellow
4. White

Question Type : **MCQ**
Question ID : **7155051580**
Option 1 ID : **7155054760**
Option 2 ID : **7155054759**
Option 3 ID : **7155054757**
Option 4 ID : **7155054758**
Status : **Not Answered**
Chosen Option : **--**

Section : **Chemistry Section B**

Q.51 Sum of π – bonds present in peroxodisulphuric acid and pyrosulphuric acid is _____

Given **4**
Answer :

Question Type : **SA**
Question ID : **7155051588**
Status : **Answered**

Q.52 The number of units,which are used to express concentration of solutions from the following is _____

Mass percent, Mole, Mole fraction, Molarity, ppm, Molality

Given **4**
Answer :

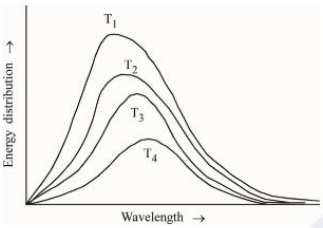
Question Type : **SA**
Question ID : **7155051581**
Status : **Answered**

Q.53 Maximum number of isomeric monochloro derivatives which can be obtained from 2,2,5,5-tetramethylhexane by chlorination is _____

Given **--**
Answer :

Question Type : **SA**
Question ID : **7155051590**
Status : **Not Answered**

Q.54 Following figure shows spectrum of an ideal black body at four different temperatures. The number of **correct** statement/s from the following is _____

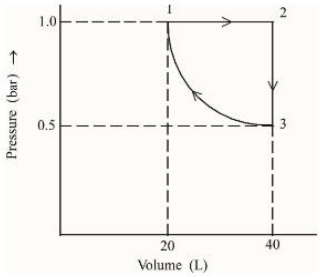


A. $T_4 > T_3 > T_2 > T_1$
B. The black body consists of particles performing simple harmonic motion.
C. The peak of the spectrum shifts to shorter wavelength as temperature increases.
D. $\frac{T_1}{\nu_1} = \frac{T_2}{\nu_2} = \frac{T_3}{\nu_3} \neq$ constant
E. The given spectrum could be explained using quantisation of energy.

Given **--**
Answer :

Question Type : **SA**
Question ID : **7155051582**
Status : **Not Answered**

Q.55 One mole of an ideal monoatomic gas is subjected to changes as shown in the graph. The magnitude of the work done (by the system or on the system) is _____ J (nearest integer)



Given : log 2 = 0.3
ln 10 = 2.3

Given --
Answer :

Question Type : **SA**
Question ID : **7155051584**
Status : **Not Answered**

Q.56 Total number of tripeptides possible by mixing of valine and proline is _____

Given --
Answer :

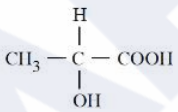
Question Type : **SA**
Question ID : **7155051589**
Status : **Not Answered**

Q.57 The total pressure observed by mixing two liquids A and B is 350 mm Hg when their mole fractions are 0.7 and 0.3 respectively.
The total pressure becomes 410 mm Hg if the mole fractions are changed to 0.2 and 0.8 respectively for A and B. The vapour pressure of pure A is _____ mm Hg. (Nearest integer)
Consider the liquids and solutions behave ideally.

Given **314**
Answer :

Question Type : **SA**
Question ID : **7155051585**
Status : **Answered**

Q.58 If the pKa of lactic acid is 5, then the pH of 0.005 M calcium lactate solution at 25° C is _____ $\times 10^{-1}$ (Nearest integer)

Lactic acid 

Given --
Answer :

Question Type : **SA**
Question ID : **7155051586**
Status : **Not Answered**

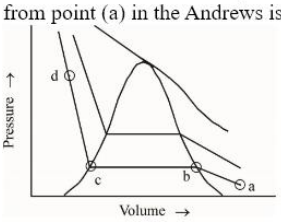
Q.59 The number of statement/s which are the characteristics of physisorption is _____

A. It is highly specific in nature
B. Enthalpy of adsorption is high
C. It decreases with increase in temperature
D. It results into unimolecular layer
E. No activation energy is needed

Given --
Answer :

Question Type : **SA**
Question ID : **7155051587**
Status : **Not Answered**

Q.60 The number of statement/s, which are **correct** with respect to the compression of carbon dioxide from point (a) in the Andrews isotherm from the following is _____



A. Carbon dioxide remains as a gas upto point (b)
B. Liquid carbon dioxide appears at point (c)
C. Liquid and gaseous carbon dioxide coexist between points (b) and (c)
D. As the volume decreases from (b) to (c), the amount of liquid decreases

Given --
Answer :

Question Type : **SA**
Question ID : **7155051583**
Status : **Not Answered**

Section : **Mathematics Section A**

Q.61 The equations of the sides AB and AC of a triangle ABC are $(\lambda + 1)\,x + \lambda y = 4$ and $\lambda x + (1 - \lambda)\,y + \lambda = 0$ respectively. Its vertex A is on the y - axis and its orthocentre is (1,2). The length of the tangent from the point C to the part of the parabola $y^2 = 6x$ in the first quadrant is :

Options
1. 4
2. 2
3. $2\sqrt{2}$
4. $\sqrt{6}$

Question Type : **MCQ**
Question ID : **7155051605**
Option 1 ID : **7155054830**
Option 2 ID : **7155054827**
Option 3 ID : **7155054828**
Option 4 ID : **7155054829**
Status : **Not Answered**
Chosen Option : **--**

Q.62 Let p and q be two statements. Then $\sim(p \wedge (p \Rightarrow \sim q))$ is equivalent to

Options

1. $p \vee ((\sim p) \wedge q)$
2. $(\sim p) \vee q$
3. $p \vee (p \wedge q)$
4. $p \vee (p \wedge (\sim q))$

Question Type : **MCQ**
Question ID : **7155051610**
Option 1 ID : **7155054849**
Option 2 ID : **7155054848**
Option 3 ID : **7155054847**
Option 4 ID : **7155054850**
Status : **Answered**
Chosen Option : **2**

Q.63 Let $y = y(x)$ be the solution of the differential equation $(x^2 - 3y^2)\,dx + 3xy\,dy = 0, y(1) = 1$.

Then $6\,y^2(e)$ is equal to

Options

1. $\frac{3}{2}e^2$
2. e^2
3. $2e^2$
4. $3e^2$

Question Type : **MCQ**
Question ID : **7155051603**
Option 1 ID : **7155054820**
Option 2 ID : **7155054819**
Option 3 ID : **7155054821**
Option 4 ID : **7155054822**
Status : **Not Answered**
Chosen Option : **--**

Q.64 The number of real solutions of the equation $3\left(x^2 + \frac{1}{x^2}\right) - 2\left(x + \frac{1}{x}\right) + 5 = 0$, is

Options

1. 3
2. 4
3. 0
4. 2

Question Type : **MCQ**
Question ID : **7155051592**
Option 1 ID : **7155054777**
Option 2 ID : **7155054778**
Option 3 ID : **7155054775**
Option 4 ID : **7155054776**
Status : **Answered**
Chosen Option : **3**

Q.65 If $f(x)=\frac{2^{2x}}{2^{2x}+2}, x\in\mathbb{R}$, then $f\left(\frac{1}{2023}\right)+f\left(\frac{2}{2023}\right)+...+f\left(\frac{2022}{2023}\right)$ is equal to

Options
1. 2010
2. 2011
3. 1011
4. 1010

Question Type : **MCQ**
Question ID : **7155051591**
Option 1 ID : **7155054773**
Option 2 ID : **7155054774**
Option 3 ID : **7155054772**
Option 4 ID : **7155054771**
Status : **Not Answered**
Chosen Option : **--**

Q.66 If the system of equations

$x+2y+3z=3$

$4x+3y-4z=4$

$8x+4y-\lambda z=9+\mu$

has infinitely many solutions, then the ordered pair (λ, μ) is equal to :

Options
1. $\left(-\frac{72}{5},-\frac{21}{5}\right)$
2. $\left(-\frac{72}{5},\frac{21}{5}\right)$
3. $\left(\frac{72}{5},\frac{21}{5}\right)$
4. $\left(\frac{72}{5},-\frac{21}{5}\right)$

Question Type : **MCQ**
Question ID : **7155051594**
Option 1 ID : **7155054786**
Option 2 ID : **7155054784**
Option 3 ID : **7155054783**
Option 4 ID : **7155054785**
Status : **Answered**
Chosen Option : **4**

Q.67 The locus of the mid points of the chords of the circle $C_1 : (x-4)^2 + (y-5)^2 = 4$ which subtend an angle θ_i at the centre of the circle C_1, is a circle of radius r_i. If $\theta_1 = \frac{\pi}{3}, \theta_3 = \frac{2\pi}{3}$ and $r_1^2 = r_2^2 + r_3^2$, then θ_2 is equal to

Options

1. $\frac{\pi}{4}$
2. $\frac{\pi}{2}$
3. $\frac{3\pi}{4}$
4. $\frac{\pi}{6}$

Question Type : **MCQ**
Question ID : **7155051604**
Option 1 ID : **7155054825**
Option 2 ID : **7155054823**
Option 3 ID : **7155054826**
Option 4 ID : **7155054824**
Status : **Not Answered**
Chosen Option : **--**

Q.68 Let the plane containing the line of intersection of the planes P1 : $x + (\lambda + 4)y + z = 1$ and P2 : $2x + y + z = 2$ pass through the points (0, 1, 0) and (1, 0, 1). Then the distance of the point $(2\lambda, \lambda, -\lambda)$ from the plane P2 is

Options

1. $2\sqrt{6}$
2. $5\sqrt{6}$
3. $3\sqrt{6}$
4. $4\sqrt{6}$

Question Type : **MCQ**
Question ID : **7155051606**
Option 1 ID : **7155054831**
Option 2 ID : **7155054834**
Option 3 ID : **7155054832**
Option 4 ID : **7155054833**
Status : **Not Answered**
Chosen Option : **--**

Q.69 Let the six numbers $a_1, a_2, a_3, a_4, a_5, a_6$, be in A.P. and $a_1 + a_3 = 10$. If the mean of these six numbers is $\frac{19}{2}$ and their variance is σ^2, then $8\sigma^2$ is equal to :

Options

1. 200
2. 210
3. 220
4. 105

Question Type : **MCQ**
Question ID : **7155051609**
Option 1 ID : **7155054843**
Option 2 ID : **7155054845**
Option 3 ID : **7155054846**
Option 4 ID : **7155054844**
Status : **Not Answered**
Chosen Option : **--**

Q.70 The set of all values of a for which $\lim_{x\to a}\left([x-5]-[2x+2]\right)=0$,

where $[\propto]$ denotes the greatest integer less than or equal to $\propto$ is equal to

Options
1. $(-7.5, -6.5]$
2. $[-7.5, -6.5)$
3. $[-7.5, -6.5]$
4. $(-7.5, -6.5)$

Question Type : **MCQ**
Question ID : **7155051600**
Option 1 ID : **7155054809**
Option 2 ID : **7155054810**
Option 3 ID : **7155054808**
Option 4 ID : **7155054807**
Status : **Answered**
Chosen Option : **3**

Q.71 If $f(x)=x^3-x^2f'(1)+xf''(2)-f'''(3), x\in\mathbb{R}$, then

Options
1. $f(1)+f(2)+f(3)=f(0)$
2. $f(3)-f(2)=f(1)$
3. $3f(1)+f(2)=f(3)$
4. $2f(0)-f(1)+f(3)=f(2)$

Question Type : **MCQ**
Question ID : **7155051601**
Option 1 ID : **7155054814**
Option 2 ID : **7155054812**
Option 3 ID : **7155054811**
Option 4 ID : **7155054813**
Status : **Not Answered**
Chosen Option : **--**

Q.72 Let $f(x)$ be a function such that $f(x+y)=f(x)\cdot f(y)$ for all $x, y\in\mathbb{N}$. If $f(1)=3$ and $\sum_{k=1}^{n}f(k)=3279$,

then the value of n is

Options
1. 8
2. 7
3. 9
4. 6

Question Type : **MCQ**
Question ID : **7155051599**
Option 1 ID : **7155054804**
Option 2 ID : **7155054805**
Option 3 ID : **7155054806**
Option 4 ID : **7155054803**
Status : **Answered**
Chosen Option : **2**

Q.73 The value of $\left(\frac{1+\sin\frac{2\pi}{9}+i\cos\frac{2\pi}{9}}{1+\sin\frac{2\pi}{9}-i\cos\frac{2\pi}{9}}\right)^3$ is

Options

1. $\frac{1}{2}\left(1-i\sqrt{3}\right)$
2. $-\frac{1}{2}\left(\sqrt{3}-i\right)$
3. $-\frac{1}{2}\left(1-i\sqrt{3}\right)$
4. $\frac{1}{2}\left(\sqrt{3}+i\right)$

Question Type : **MCQ**
Question ID : **7155051593**
Option 1 ID : **7155054781**
Option 2 ID : **7155054779**
Option 3 ID : **7155054782**
Option 4 ID : **7155054780**
Status : **Not Answered**
Chosen Option : **--**

Q.74 The number of integers, greater than 7000 that can be formed, using the digits 3,5,6,7,8 without repetition, is

Options

1. 48
2. 168
3. 220
4. 120

Question Type : **MCQ**
Question ID : **7155051597**
Option 1 ID : **7155054795**
Option 2 ID : **7155054796**
Option 3 ID : **7155054798**
Option 4 ID : **7155054797**
Status : **Answered**
Chosen Option : **2**

Q.75 $\int_{\frac{3\sqrt{2}}{4}}^{\frac{3\sqrt{3}}{4}} \frac{48}{\sqrt{9-4x^2}}\,dx$ is equal to

Options

1. $\frac{\pi}{6}$
2. $\frac{\pi}{3}$
3. 2π
4. $\frac{\pi}{2}$

Question Type : **MCQ**
Question ID : **7155051602**
Option 1 ID : **7155054817**
Option 2 ID : **7155054816**
Option 3 ID : **7155054815**
Option 4 ID : **7155054818**
Status : **Answered**
Chosen Option : **3**

Q.76 Let $\vec{\alpha} = 4\hat{i}+3\hat{j}+5\hat{k}$ and $\vec{\beta} = \hat{i}+2\hat{j}-4\hat{k}$. Let $\vec{\beta}_1$ be parallel to $\vec{\alpha}$ and $\vec{\beta}_2$ be perpendicular to $\vec{\alpha}$. If $\vec{\beta} = \vec{\beta}_1 + \vec{\beta}_2$, then the value of $5\vec{\beta}_2 \cdot \left(\hat{i}+\hat{j}+\hat{k}\right)$ is

Options

1. 6
2. 9
3. 11
4. 7

Question Type : **MCQ**
Question ID : **7155051608**
Option 1 ID : **7155054839**
Option 2 ID : **7155054841**
Option 3 ID : **7155054842**
Option 4 ID : **7155054840**
Status : **Not Answered**
Chosen Option : **--**

Q.77 Let A be a 3×3 matrix such that $|\text{adj (adj (adj A))}| = 12^4$ Then $|A^{-1}\text{ adj A}|$ is equal to

Options

1. 12
2. 1
3. $\sqrt{6}$
4. $2\sqrt{3}$

Question Type : **MCQ**
Question ID : **7155051595**
Option 1 ID : **7155054787**
Option 2 ID : **7155054788**
Option 3 ID : **7155054790**
Option 4 ID : **7155054789**
Status : **Not Answered**
Chosen Option : **--**

Q.78 If the foot of the perpendicular drawn from (1, 9, 7) to the line passing through the point (3, 2, 1) and parallel to the planes $x + 2y + z = 0$ and $3y - z = 3$ is (α,β,γ), then $\alpha + \beta + \gamma$ is equal to

Options
1. 5
2. 3
3. 1
4. -1

Question Type : **MCQ**
Question ID : **7155051607**
Option 1 ID : **7155054836**
Option 2 ID : **7155054835**
Option 3 ID : **7155054837**
Option 4 ID : **7155054838**
Status : **Not Answered**
Chosen Option : **--**

Q.79 The number of square matrices of order 5 with entries from the set {0, 1}, such that the sum of all the elements in each row is 1 and the sum of all the elements in each column is also 1, is

Options
1. 225
2. 125
3. 150
4. 120

Question Type : **MCQ**
Question ID : **7155051596**
Option 1 ID : **7155054791**
Option 2 ID : **7155054793**
Option 3 ID : **7155054792**
Option 4 ID : **7155054794**
Status : **Not Answered**
Chosen Option : **--**

Q.80 If $({}^{30}C_1)^2 + 2({}^{30}C_2)^2 + 3({}^{30}C_3)^2 + \ldots + 30\,({}^{30}C_{30})^2 = \frac{\alpha\, 60!}{(30!)^2}$ then α is equal to :

Options
1. 60
2. 15
3. 10
4. 30

Question Type : **MCQ**
Question ID : **7155051598**
Option 1 ID : **7155054802**
Option 2 ID : **7155054800**
Option 3 ID : **7155054799**
Option 4 ID : **7155054801**
Status : **Not Answered**
Chosen Option : **--**

Section : **Mathematics Section B**

Q.81 If $\frac{1^3 + 2^3 + 3^3 + \ldots \text{ up to } n \text{ terms}}{1\cdot 3 + 2\cdot 5 + 3\cdot 7 + \ldots \text{ up to } n \text{ terms}} = \frac{9}{5}$, then the value of n is

Given Answer : **--**

Question Type : **SA**
Question ID : **7155051613**
Status : **Not Answered**

Q.82 Let f be a differentiable function defined on $\left[0,\frac{\pi}{2}\right]$ such that $f(x) > 0$ and

$f(x)+\int_0^x f(t)\sqrt{1-(\log_e f(t))^2}\,dt = e, \forall x \in \left[0,\frac{\pi}{2}\right]$. Then $\left(6\log_e f\left(\frac{\pi}{6}\right)\right)^2$ is equal to _____.

Given --
Answer :

Question Type : **SA**
Question ID : **7155051615**
Status : **Not Answered**

Q.83 The equations of the sides AB, BC and CA of a triangle ABC are : $2x+y=0, x+py=21a, (a\neq 0)$ and $x-y=3$ respectively. Let P(2, a) be the centroid of ΔABC. Then $(BC)^2$ is equal to

Given --
Answer :

Question Type : **SA**
Question ID : **7155051619**
Status : **Not Answered**

Q.84 If the shortest between the lines

$$\frac{x+\sqrt{6}}{2}=\frac{y-\sqrt{6}}{3}=\frac{z-\sqrt{6}}{4} \text{ and } \frac{x-\lambda}{3}=\frac{y-2\sqrt{6}}{4}=\frac{z+2\sqrt{6}}{5}$$

is 6, then the square of sum of all possible values of λ is

Given --
Answer :

Question Type : **SA**
Question ID : **7155051620**
Status : **Not Answered**

Q.85 Let $S = \{\theta \in [0, 2\pi) : \tan(\pi\cos\theta) + \tan(\pi\sin\theta) = 0\}$.

Then $\sum_{\theta\in S}\sin^2\left(\theta+\frac{\pi}{4}\right)$ is equal to _____.

Given --
Answer :

Question Type : **SA**
Question ID : **7155051618**
Status : **Not Answered**

Q.86 The minimum number of elements that must be added to the relation R = {(a, b), (b, c), (b, d)} on the set {a, b, c, d} so that it is an equivalence relation, is _____.

Given **9**
Answer :

Question Type : **SA**
Question ID : **7155051611**
Status : **Answered**

Q.87 Three urns A, B and C contain 4 red, 6 black; 5 red, 5 black; and λ red, 4 black balls respectively. One of the urns is selected at random and a ball is drawn. If the ball drawn is red and the probability that it is drawn from urn C is 0.4 then the square of the length of the side of the largest equilateral triangle, inscribed in the parabola $y^2 = \lambda x$ with one vertex at the vertex of the parabola, is

Given --
Answer :

Question Type : **SA**
Question ID : **7155051617**
Status : **Not Answered**

Q.88 Let $\vec{a} = \hat{i} + 2\hat{j} + \lambda\hat{k}, \vec{b} = 3\hat{i} - 5\hat{j} - \lambda\hat{k}, \vec{a}\cdot\vec{c} = 7, 2\vec{b}\cdot\vec{c} + 43 = 0, \vec{a}\times\vec{c} = \vec{b}\times\vec{c}$. Then $|\vec{a}\cdot\vec{b}|$ is equal to

Given --
Answer :

Question Type : **SA**
Question ID : **7155051616**
Status : **Not Answered**

Q.89 Let the sum of the coefficients of the first three terms in the expansion of $\left(x - \frac{3}{x^2}\right)^n, x \neq 0, n \in \mathbb{N}$, be 376. Then the coefficient of x^4 is _____.

Given --
Answer :

Question Type : **SA**
Question ID : **7155051612**
Status : **Not Answered**

Q.90 If the area of the region bounded by the curves $y^2 - 2y = -x, x + y = 0$ is A, then 8 A is equal to _____

Given --
Answer :

Question Type : **SA**
Question ID : **7155051614**
Status : **Not Answered**