

1. Which UML diagram is best suited to represent the interactions between users and a system?
- A) Class diagram
 - B) Use case diagram
 - C) Sequence diagram
 - D) State diagram

ANSWER: B

2. What is system maintenance?
- A) The process of identifying problems and opportunities in a system
 - B) The process of designing a new system
 - C) The process of implementing a system
 - D) The process of keeping a system operational and up to date

ANSWER: B

3. What is abstraction?
- A) The ability to represent complex objects using simpler objects
 - B) The ability of an object to hold and manage data and behavior within it
 - C) The ability of an object to inherit attributes and behavior from another object
 - D) The ability of an object to interact with other objects

ANSWER: A

4. The Analysis phase of the SDLC typically involves:
- A) Gathering and analyzing user requirements
 - B) Designing the system architecture
 - C) Coding and testing the system
 - D) Maintaining the system

ANSWER: A

5. From relationship types one is represented by a circle and it is used to describe the functionality without implementation.
- A) Interface notation
 - B) Actor notation
 - C) collaboration notation
 - D) use case notation

ANSWER: A

6. Which one of the following is not considered as a non-functional requirement during system development.
- A) Performance of the system
 - B) Interoperability

- C) Scalability
- D) **Business rule**

ANSWER: D

7. Which feature of OOPS described the reusability of code?

- A) Encapsulation
- B) Abstraction
- C) Polymorphism
- D) **Inheritance**

ANSWER: D

8. Which of the communication modes support two way traffic but in only once direction of a time?

- A) Simplex
- B) **Half-duplex**
- C) Three - quarter's duplex
- D) Full duplex

ANSWER: B

9. What is the name of the network topology in which there are bi-directional links between each possible node?

- A) Ring
- B) Star
- C) Tree
- D) **Mesh**

ANSWER: D

10. Encryption and Decryption are the functions of ____ layers.

- A) Transport
- B) Session
- C) **Presentation**
- D) Physical

ANSWER: C

11. Which of the following is the fastest media of data transfer?

- A) **Fiber optic**
- B) Co-axial cable
- C) Untwisted wire
- D) Telephone lines

ANSWER: A

12. NIC stands for_____.

- A) National Interface Card
- B) Network Inter Connection
- C) Network International Connection
- D) **Network Interface Card**

ANSWER: D

13. A communication processor that connects dissimilar networks by providing the translation from one set of protocols to another is

- A) Modem
- B) Router
- C) Bridge
- D) **Gateway**

ANSWER: D

14. How long is an IPv6 address?

- A) 32 bits
- B) 64 bits
- C) **128 bits**
- D) 128 bytes

ANSWER: C

15. What is an ERP system?

- A) A programming language used for database management.
- B) A software solution that integrates various business processes and departments within an organization.
- C) A type of computer hardware used for networking.
- D) A marketing strategy for promoting products and services.

ANSWER: B

16. Which modules are commonly found in an ERP system?

- A) Graphic design, web development, content management.
- B) Social media marketing, search engine optimization, email marketing.
- C) Customer service, sales forecasting, market research.
- D) Finance and accounting, human resources, inventory management, supply chain management.

ANSWER: D

17. Why do you think most ERP implementation fail?

- A) People have unrealistic expectations of the new system.
- B) People don't understand the basic concepts of the system.
- C) The basic data is inaccurate.
- D) The system has technical difficulties
- E) All

ANSWER: E

18. From the following ERP Implementation Life Cycle phase which one is similar to system analysis

- A) Adaptation
- B) Acceptance
- C) Routinization
- D) Infusion

ANSWER: B

19. From the following which is important points to be kept in mind while evaluating ERP software?

- A) Quick implementation
- B) It is better to have a selection committee that will do the evaluation process.
- C) Functional fit with the company's business process.
- D) Degree of integration between the various components of the ERP system.
- E) All

ANSWER: E

20. How does an ERP system support decision-making?

- A) By limiting access to data for decision-makers.
- B) By relying on manual data entry and analysis.
- C) By providing real-time access to accurate and comprehensive data.
- D) By restricting collaboration among departments.

ANSWER: C

21. Why is user training important in ERP implementation?

- A) To ensure employees understand how to effectively use the system.
- B) To increase resistance to change among employees.
- C) To minimize the system's benefits.
- D) To eliminate the need for on-going support.

ANSWER: A

22. In cryptography, the order of letters in a message is rearranged by _____

- A) Transposition ciphers**

- B) Substitution ciphers
- C) Both (A) and (B)
- D) Quadratic ciphers

ANSWER: A

23. In public key encryption, if A wants to send an encrypted message

- A) **A encrypts message using B's public key**
- B) A encrypts message using his private key
- C) A encrypts message using B's private key
- D) A encrypts message using his public key

ANSWER: A

24. A security services that ensure users can not be able to deny having performed an action or activity.

- A) Non-repudiation
- B) Integrity
- C) Authorization
- D) Authentication

ANSWER: A

25. Which one of the following is not ensured by digital signature?

- A) Confidentiality
- B) Authencity
- C) Integrity
- D) **Availability**

ANSWER: D

26. A security tool to verify the authenticity of the message and claimed identity of the sender and to verify the message integrity is

- A) Encryption
- B) Firewalls
- C) Digital certificates
- D) **Digital signature**

ANSWER: D

27. Mr. X sends some message through email to Mr. Y. When the message is on transmission to Mr. Y attackers obtain the message and modify the content that is being transmitted. Which type of security attack?

- A) Replay
- B) Release of message content

- C) Traffic analysis
- D) None

ANSWER: D

28. Which one of the following wrong about security attacks?
- A) Active attacks are difficult to detect than passive attack
 - B) It is quite difficult to prevent active attacks absolutely
 - C) Active attacks attempts to learn or make use of information from the system but doesn't affect system resources
 - D) A and B
 - E) All

ANSWER: E

29. Who has ultimate responsibility for project risk?
- A) Steering group.
 - B) Risk owner.
 - C) Project sponsor.
 - D) Project manager.

ANSWER: C

30. Which one of the following statements best defines teamwork?
- A) People working collaboratively towards a common goal.
 - B) Developing skills that will enhance project performance.
 - C) Gathering the right people together to work on a project.
 - D) Establishing vision and direction towards a common purpose

ANSWER: A

31. A review undertaken to decide whether a project should proceed into its next phase is known as a:
- A) Gate review.
 - B) Feasibility study.
 - C) Milestone review.
 - D) Evaluation review.

ANSWER: A

32. What is a visual representation of a project's planned activities against a calendar called?
- A) A Gantt chart.
 - B) A critical path networks.
 - C) A product flow diagram.
 - D) A Pareto charts

ANSWER: A

33. Who are project team members primarily accountable to?

- A) External stakeholders.
- B) The end users.
- C) The finance director.
- D) The project manager.

ANSWER: D

34. The phases of a project life cycle are:

- A) Starting, planning, control and closing.
- B) Concept, definition, development, handover and closure.
- C) Initiation, definition, planning, monitoring and operations.
- D) Concept, definition, implementation and operations.

ANSWER: B

35. Which structure shows the reporting relationships and communications channels for a project?

- A) Work Breakdown Structure.
- B) Organisational Breakdown Structure.
- C) Product Breakdown Structure.
- D) Responsibility assignment structure.

ANSWER: B

36. All are grouped under the category of unsupervised machine learning, Except?

- A) Classification
- B) Clustering
- C) Association Rule Mining
- D) Anomaly Detection

ANSWER: A

37. Which one is model parameter in machine learning?

- A) Batch Size
- B) Biases of a neural network
- C) Learning Rate
- D) Number of Hidden Layer

ANSWER: B

38. What do mean True positive?

- A) Is the value which is actually negative, but incorrectly predicted as positive.

- B) Is the value which is actually positive, but incorrectly predicted as negative.
- C) Is the value which is actually positive and also, correctly predicted as positive.
- D) Is the value which is actually negative and also, correctly predicted as negative.

ANSWER: C

39. In which type of machine learning, the machine learns through examples that contain desired outcomes collected from historic data?

- A) Unsupervised
- B) Semi-Supervised
- C) Supervised
- D) Reinforcement

ANSWER: C

40. Which type of clustering method creates a hierarchical decomposition of the given set of data objects?

- A) Hierarchical Method
- B) Partitioning Method
- C) Density-based method
- D) Grid-based approach

ANSWER: A

41. Prototype is _____

- A) Working model of existing systems
- B) Mini model of processed systems
- C) Mini model of existing systems
- D) NONE

ANSWER: A

42. Summary transaction data, high volume data, and simple models are information input characteristic of _____

- A) Decision support system (DSS)
- B) Management information system (MIS)
- C) Executive support system (ESS)
- D) Transaction processing system (TPS)

ANSWER: B

43. The most creative and challenging phase of system life cycle is ____

- A) Feasibility study
- B) Maintenance
- C) Design
- D) None of the above

ANSWER: C

44. The language to solve numeric problem is ____

- A) C language
- B) FORTRAN
- C) BASIC
- D) COBOL

ANSWER: B

45. Management information systems usually ____

- A) serve managers interested in weekly, monthly, and yearly results, not day-to-day activities
- B) Help managers make decisions that are unique, rapidly changing, and not easily specified in advance
- C) Provide managers with a generalized computing and telecommunications capacity that can be applied to a changing array of problems
- D) Perform and record the daily routine transactions necessary to the conduct of business

ANSWER: A

46. Which one of the following is not one of the major dimensions for developing international information systems architecture?

- A) Corporate global strategies
- B) Organization structure
- C) Management and business processes
- D) Business process reengineering

ANSWER: D

47. The results of 'what-if' questions asked repeatedly to determine the impact of changes is one or more factors on the outcomes are called ____

- A) Data modeling
- B) Forecasting
- C) Classification and clustering
- D) Sensitivity analysis

ANSWER: D

48. Suppose that document 1 and document 2 are vectors such that document 1 = [0, 4, 0, 3, 0] and document 2 = [0, 3, 0, 4, 0], what is the cosine similarity for the documents?

- A) 0.92
- B) 0.94
- C) 0.96
- D) 0.98

ANSWER: B

49. Given the list “**appeal** appear **arrive**” (ignoring the white space), what is the file size after compressing the file using variable Huffman coding?

A) 134 bits

B) 144 bits

C) 154 bits

D) 164 bits

ANSWER: A

50. Which data compression technique assigns variable-length codes to characters based on the recursive division of a set of characters into two subsets of roughly equal probability?

A) Run-length Encoding

B) Fractal Compression

C) Shannon-Fano Encoding

D) Huffman Encoding

ANSWER: C

51. Which data compression technique uses the concept of entropy to assign shorter codes to more frequently occurring symbols?

A) Shannon-Fano Encoding

B) Arithmetic Encoding

C) Run-length Encoding

D) Huffman Encoding

ANSWER: D

52. Taking the challenges of Retrieval Systems in to account, one is a limitation of the description-based indexing & retrieval.

A) Difficulties may not arise due to the use of different indexing languages or vocabularies by different users.

B) It is easy to describe the contents of multimedia via human language.

C) A manual annotation of text phrases for a large database is easy to deploy.

D) A given multimedia object cannot be described with a complete set of keywords.

ANSWER: D

53. Identify the technique(s) used in developing content-based multimedia information retrieval systems.

A) Computationally efficient methods to compress & index the information retrieval, and browse the information.

B) Syntactically rich models to represent multimedia data.

C) Semantic visual interfaces to integrate the methods and models in to a viable multimedia information system.

D) All of the above!

ANSWER: D

54. Bearing in mind the various features of storage devices we have, from the following options _____ deals with allowing information to be over written at any time.
- A) Durability
 - B) Addressability
 - C) Volatility
 - D) Mutability

ANSWER: D

55. Which statement is correct for the comment used in C++ programming?
- A) Comments are used to have some explanations in the programmer's source code
 - B) only if a line begins with double slash, it is a comment
 - C) Comment decides the sequence of operations in the program
 - D) Comments must be outside the curly braces

ANSWER: A

56. `const int length=50;` Regarding the above statement which of the statements is true?
- A) Declares a variable length initialized as 50
 - B) Declares a construction with initialized as 50
 - C) Declares an integer type constant length with a fixed value of 50
 - D) Constructs an integer type variable with length a value 50

ANSWER: C

57. Method which uses a list of well-defined instructions to complete a task starting from a given initial state to end state is calls as
- A) Program
 - B) Flowchart
 - C) Algorithm
 - D) Software

ANSWER: C

58. To write the correct and effective program we must first
- A) Draw a flowchart
 - B) Write the pseudo code
 - C) Plan its logic
 - D) All of the above

ANSWER: D

59. A function that does not return any data is called as function

- A) int
- B) float
- C) void
- D) Recursive

ANSWER: C

60. The program we design in any programming language need to be:

- A) Reliable
- B) Maintainable
- C) Portable
- D) Efficient
- E) All of the above

ANSWER: E

61. An expression contains relational operators, assignment operators and arithmetic operators. In the absence of parentheses, they will be evaluated in which of the following order

- A) Assignment, Relational, Arithmetic
- B) Assignment, Relational, Assignment
- C) Relational, Arithmetic, Assignment
- D) Assignment, Arithmetic, Relational

ANSWER: C

62. Which of the following is the correct behaviour with respect to the code below?

```
<p id="greeting" class="hello world">This is me greeting the world</p>
```

- A) Both the class name and paragraph text cannot contain "world"
- B) Two different class "hello" and "world" will be applied to the paragraph.
- C) The code is invalid because space is not allowed in class attribute's value
- D) One class "hello world" will be applied to the paragraph

ANSWER: D

63. Which type of CSS is used in the below code?

```
<h1 style = "border:2px solid red;"> hello world</h1>
```

- A) Inline CSS
- B) Internal CSS
- C) External CSS
- D) None of the above

ANSWER: A

64. What does *margin: 50px 20px;* specifies?

- A) top margin is 50px
- B) bottom margin is 20px
- C) left margin is 20px
- D) Both A & C

ANSWER: D

65. In an HTML document, the correct sequence of the tags for starting a web page is:

- A) Head, Title, Html, Body
- B) Html, Title, Head, Body
- C) Html, Head, Title, Body
- D) Html, Body, Title, Head

ANSWER: C

66. In HTML, which attribute is used to create a link that opens in a new window tab?

- A) `src="_blank"`
- B) `alt="_blank"`
- C) `target="_self"`
- D) `target="_blank"`

ANSWER: D

67. Which function is used to erase all session variables stored in the current session?

- A) `session_destroy()`
- B) `session_change()`
- C) `session_remove()`
- D) `session_unset()`

ANSWER: A

68. Which one of the following variables is used to access values from a PHP form submitted by POST method?

- A) `$_REQUEST`
- B) `$_GET`
- C) `$_SERVER`
- D) None

ANSWER: A

69. What is the main goal of knowledge management?

- A) To improve an organization's efficiency and save knowledge within the company.
- B) To create a culture of learning and development among employees.
- C) To identify, organize, store and disseminate information within an organization.

D) To facilitate the connection staff looking for information with the people who have it.

ANSWER: A

70. What are the three main types of knowledge covered by knowledge management?

- A) Explicit, implicit and tacit knowledge.
- B) Theoretical, practical and experiential knowledge.
- C) Declarative, procedural and conditional knowledge.
- D) General, specific and contextual knowledge.

ANSWER: A

71. What is a knowledge management system?

- A) Any technology that is used to store and manage knowledge.
- B) Any tool that oversees knowledge management.
- C) Any process that involves creating, sharing, structuring and auditing knowledge.
- D) Any strategy that achieves business outcomes more quickly.

ANSWER: A

72. What is an example of tacit knowledge?

- A) How to change the toner in a printer
- B) How to ride a bike
- C) How to write a report
- D) How to solve a math problem

ANSWER: B

73. What is a knowledge base?

- A) A centralized place to store information and access it readily
- B) A network of experts who share their knowledge with others
- C) A collection of best practices and lessons learned from past projects
- D) A system that captures, analyzes and distributes knowledge automatically

ANSWER: A

74. Which of the following is true about Simple-reflex agent?

- A) Simple reflex agent behaviours occur even in more complex environments.
- B) The agent will work only if the environment is fully observable
- C) We need some information about how the world evolves independently of then agent
- D) both B and C
- E) both A and B

ANSWER: E

75. Which of the following is required for an agent to overcome the initial ignorance of its environment?

- A) Learning
- B) Knowledge Base
- C) Logical reasoning
- D) All of the above
- E) Both A and C

ANSWER: D

76. Which algorithm evaluation attribute deals with, how long does the algorithm take to find a solution?

- A) Completeness
- B) Time complexity
- C) Optimality
- D) Space complexity

ANSWER: B

77. In which problem-solving step, you have to put down the actions and states that the agent has to consider given a goal?

- A) Execute
- B) Search
- C) Goal formulation
- D) Problem formulation

ANSWER: D

78. Which type search algorithm modifies the BFS by always expanding least-cost unexpanded node?

- A) Uniform cost search
- B) Beam search
- C) Local search
- D) Depth first search

ANSWER: A

79. Which of the following is considered as subsystem of information retrieval

- A) Cross language IR
- B) Multimedia IR
- C) Searching and indexing
- D) Lexical analysis and stemming

ANSWER: C

80. Not all words in a document are equally significant to represent the contents/meanings of a document. Using the set of all words in a collection to index documents creates too much noise for the retrieval task. What do you do to overcome the problem?

- A) We need to pre-process the text of a document in a collection to be used as index terms.
- B) We need to prepare large amount storage area.
- C) We have to take the read only once (rare words).
- D) We have to take only words that appears more frequent.

ANSWER: A

81. Which of the following information retrieval metrics takes in to account the order of document in the search results?

- A) Precision
- B) Recall
- C) Mean average precision
- D) Normalized discounted cumulative gain

ANSWER: D

82. Which of the following terms refers to the process of searching for information within a collection of data or document?

- A) Data analysis
- B) Information retrieval
- C) Document management
- D) Data mining

ANSWER: B

83. Which one of the following is the most commonly used strategy for measuring relevance of documents for a given query?

- A) Vector Space Model
- B) Boolean Model
- C) Probabilistic Model
- D) Topic based Vector Space Model

ANSWER: A

84. The vocabulary size (unique words) of a text can be estimated using

- A) Zif's law
- B) Scientific law
- C) Heap's law
- D) Inverted index rule

ANSWER: C

85. A matrix used measure the importance of a term in text document collection is called

- A) Inverse document frequency (IDF)
- B) Term frequency
- C) Inverse term frequency
- D) Document frequency

ANSWER: A

86. Why would a class be declared as abstract?

- A) Because it doesn't make logical sense to instantiate it
- B) So that it can be used as an interface
- C) So that it cannot be inherited from
- D) Because it has no abstract methods

ANSWER: A

87. How Polymorphism is explained in object oriented programming?

- A) Polymorphism is a process for implementing inherited data
- B) Polymorphism can be implemented when data is static or dynamic
- C) Polymorphism can be implemented, when the main class is static or concrete
- D) All except C

ANSWER: D

88. Which one correct about interfaces in object oriented programming or java?

- A) In interface, only an abstract method is used
- B) The interface supports multiple inheritances
- C) The interface cannot provide implementation to an abstract class.
- D) An interface is supports only public access

ANSWER: C

89. Which statement is true?

- A) An abstract method cannot be defined inside the non-abstract class.
- B) All the abstract methods in the subclass should be overridden
- C) In Java, the interface can be extended by another interface
- D) The privacy/security is maintained by using an interface
- E) All of the above

ANSWER: A

90. The following java fragmented program implies_____

```
Class Test {
```

```
abstract void show();
```

```
}
```

- A) The program will throw a compile-time error
- B) An abstract method cannot be defined inside the non-abstract class
- C) The program will output null value
- D) A and B are answers

ANSWER: D

91. Which type of polymorphism accomplishes object binding with methods and the behaviour of a method is decided at runtime?

- A) Dynamic Polymorphism
- B) Static Polymorphism
- C) Compile-time Polymorphism
- D) All of the above

ANSWER: A

92. Will the following java code compile successfully? What is the output

```
class A {
String m1(String x){
System.out.println("One");
return "ABC";
}
String m1(String y){
System.out.println("Two");
return "PQR";
}
public static void main(String[] args){
A a = new A();
a.m1("ABC"); } }
```

- A) The code has Duplicate method error, no output
- B) The code has Duplicate method error but the code will be compiled successfully.
Output: One
- C) The code is completely error
- D) The code has no any error, the output is One Two

ANSWER: B

93. Which statement is incorrect about Binding in object oriented programming?

- A) Binding is connecting (linking) between a method call and method definition
- B) Static binding is occurs during compilation and resolved at the compiled time
- C) Dynamic binding is occurs during runtime and resolved based on the type of object at runtime
- D) None of the above

ANSWER: D

94. Which of the following is NOT a technique used for concurrency control in a DBMS?

- A) Locking
- B) Timestamp ordering
- C) Two-phase locking
- D) Data encryption

ANSWER: D

95. What is database query optimization in this scenario?

- A) It is the process of designing a database schema.
- B) It is the process of transforming a high-level query into a sequence of low-level operations that can be executed by the database system in the most efficient way possible.
- C) It is the process of creating tables, columns, and constraints in a database.
- D) It is the process of ensuring that a set of related database operations are executed as a single unit of work.

ANSWER: B

96. What is an example of a database indexing technique that can be used to optimize the retrieval of the list of products in this scenario?

- A) Hash index
- B) B-tree index
- C) Bitmap index
- D) Clustered index

ANSWER: B

97. What is the purpose of concurrency control in a DBMS?

- A) To ensure that all transactions execute successfully
- B) To ensure that all transactions execute in a serial manner
- C) To ensure that multiple transactions can execute simultaneously without interfering with each other
- D) To ensure that transactions can access only the data they are authorized to access

ANSWER: C

98. A company needs a DBMS that can handle large volumes of structured data and provide high-speed data retrieval. Which of the following types of DBMS is most suitable for this scenario?

- A) Relational DBMS
- B) Object-oriented DBMS
- C) NoSQL DBMS
- D) Hierarchical DBMS

ANSWER: A

99. A company needs a DBMS that can handle complex and interconnected data structures. Which of the following types of DBMS is most suitable for this scenario?

- A) Relational DBMS
- B) NoSQL DBMS
- C) Object-oriented DBMS
- D) Hierarchical DBMS

ANSWER: C

100. Which of the following is a key principle of database normalization?

- A) All data should be stored in a single table.
- B) All data should be stored in multiple tables.
- C) All data should be stored in a de normalized format.
- D) All data should be stored in a hierarchical format.

ANSWER: B