

1. Which of the following is not a limitation of File System?
 - (a) Data Redundancy
 - (b) Data Consistency
 - (c) Data Isolation
 - (d) Data Dependence
2. What type of error will be raised when a local variable name is not defined in a program?
 - (a) Syntax error
 - (b) Import error
 - (c) Indentation
 - (d) Name error
3. Which of the following SQL command is not used for Data Definition?
 - (a) CREATE
 - (b) ALTER
 - (c) DROP
 - (d) INSERT
4. Overflow Error in python occurs due to following reason:
 - (a) When the denominator in a division operation is zero
 - (b) When an operator is supplied with a value of incorrect data type
 - (c) When the result of a calculation exceeds the maximum limit for numeric data type
 - (d) Due to incorrect indentation in the program code
5. _____ command is used to view the structure of an already created table.
 - (a) VIEW
 - (b) SHOW
 - (c) DESC
 - (d) PUSH
6. Which of the following is not an example of network device?
 - (a) Modem
 - (b) Repeater
 - (c) RJ 45
 - (d) Ring
7. Which of the following refers to a set of values from which an attribute can take a value in each row?
 - (a) Tuple
 - (b) Degree
 - (c) Domain
 - (d) Relation
8. Arrange the following types of network in their increasing order of geography area covered:
 - (A) Local Area Network
 - (B) Wide Area Network
 - (C) Personal Area Network
 - (D) Metropolitan Area Network

Choose the correct answer from the options given below:

 - (a) (A), (D), (C), (B)
 - (b) (A), (C), (D), (B)
 - (c) (A), (D), (B), (C)
 - (d) (C), (A), (D), (B)
9. _____ error is raised when the requested module definition is not found.
 - (a) EOF Error
 - (b) Import Error
 - (c) Type Error
 - (d) Index Error
10. Match List-I with List-II

List-I	List-II
(A) Gateway	(I) Sends signals to only selected devices instead of sending to all
(B) Router	(II) Entry and Exit point of a network
(C) Switch	(III) Receives the data, analyse it and transmit it to other networks
(D) Hub	(IV) A network device used to connect different devices through wires, data arriving on any of the wires are sent out on all the others

Choose the **correct** answer from the options given below:

 - (a) (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
 - (b) (A)-(IV), (B)-(II), (C)-(I), (D)-(III)
 - (c) (A)-(I), (B)-(IV), (C)-(III), (D)-(II)
 - (d) (A)-(II), (B)-(III), (C)-(I), (D)-(IV)
11. Which function of SQL out of the following will include NULL values in calculating the answer?
 - (a) count (*)
 - (b) avg (attribute)
 - (c) count (attribute)
 - (d) sum (attribute)
12. Identify the correct statement in relation to "with open" command used to open a file for reading or writing or both.
 - (a) The file is closed using closed () method.
 - (b) The file is closed automatically, no need to use close method.
 - (c) Can be used for only reading a file.
 - (d) Can be used for only writing data in a file.
13. Which of the following an aggregate function in SQL?
 - (a) Select
 - (b) Create
 - (c) Alter
 - (d) Count
14. Which of the following key is used to represent the relationship between two relations?
 - (a) Candidate key
 - (b) Primary key
 - (c) Foreign key
 - (d) Alternate key
15. _____ is a language which is used to design standardised web pages so that the web contents can be read and understood from any computer.
 - (a) HTTP
 - (b) HTML
 - (c) FTP
 - (d) SMTP
16. Given below are two statements:

Statement (I) : A foreign key is used to represent the relationship between two relations.

Statement (II) : Foreign key is an attribute whose value is derived from the primary key of another relation.

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

- (a) Both **Statement I** and **Statement II** are true
 (b) Both **Statement I** and **Statement II** are false
 (c) **Statement I** is true but **Statement II** is true
 (d) **Statement I** is false but **Statement II** is true
17. _____ follows insertion and deletion operations from any end.
 (a) Linked list (b) queue
 (c) stack (d) Deque
18. A device that finds the best route of forwards data packet from one network to another is called :
 (a) Hub (b) Gateway
 (c) Router (d) Bridge
19. Which of the following is not the searching technique?
 (a) Linear search (b) Binary search
 (c) Hashing (d) Array
20. 1. Binary search (numlist, key)
 2. Step 1 : SET first = 0, last = n - 1
 3. Step 2 : Calculate mid = (first + last) // 2
 4. Step 3 : WHILE first <= last REPEAT step 4
 5. Step 4 : If numlist[mid] = key
 6. PRINT "Element found at position",
 7. _____
 8. Stop
 9. ELSE
 10. If numlist[mid] > key, THEN
 11. Last = _____
 12. ELSE first = mid + 1
 13. PRINT "Unsuccessful search"
- Which will be the correct statement at line no. 7 and 11?
 (a) mid + 1, mid - 1 (b) mid + 1, mid + 1
 (c) mid - 1, mid - 1 (d) mid - 1, mid + 1
21. _____ is a data structure in which insertion and deletion is done from one end only, usually referred as Top.
 (a) STACK (b) QUEUE
 (c) ARRAY (d) LIST
22. Deletion operation in a queue is called _____ and Insertion operation in a queue is _____.
 (a) ENQUEUE, DEQUEUE
 (b) DEQUEUE, ENQUEUE
 (c) DEQUE, ENQUE
 (d) DEQUE, ENQUEUE
23. Which of the following is not a guided communication medium?
 (a) Twisted pair cable (b) Radio waves
 (c) Coaxial cable (d) Optical fibre
24. _____ traversal from left to right of postfix/prefix expression is sufficient to evaluate in expression based on their precedences-
 (a) 01 (b) 02
 (c) 03 (d) 00

25. Match List-I with List-II.

List-I

- (A) OVER FLOW
 (B) STACK
 (C) QUEUE
 (D) Underflow

List-II

- (I) Trying to delete an element from an empty stack
 (II) LIFO
 (III) Trying to add an element to a full stack
 (IV) FIFO

Choose the **correct** answer from the options given below:

- (a) (A)-(II), (B)-(III), (C)-(IV), (D)-(I)
 (b) (A)-(III), (B)-(II), (C)-(I), (D)-(IV)
 (c) (A)-(III), (B)-(II), (C)-(IV), (D)-(I)
 (d) (A)-(II), (B)-(III), (C)-(I), (D)-(IV)

26. Identify the correct statements:

- (A) Primary key in a relation is used for unique identification of tuples
 (B) More than one attributes can not make primary key
 (C) File system does not suffers from data redundancy
 (D) Foreign key is used to relate two tables

Choose the **correct** answer from the options given below:

- (a) (A) Only (b) (D) Only
 (c) (A), (B) and (C) Only (d) (A) and (D) Only

27. The binary search is applicable only when the elements (numeric values) arranged in _____ of their key values.

- (a) Ascending order
 (b) Descending order
 (c) Either in ascending or descending order
 (d) order is not required

28. What will be the result of the given list after the pass 1 using Bubble sort?

8	7	13	1	-9	4
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- (a)

-9	1	4	7	8	13
----	---	---	---	---	----

 (b)

-9	1	7	4	8	13
----	---	---	---	---	----

 (c)

7	8	1	4	-9	13
---	---	---	---	----	----

 (d)

7	8	1	-9	4	13
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29. When all the values are sorted in ascending or descending order, the middle value is known as:

- (a) Mean (b) Median
 (c) Mode (d) Variance

30. _____ permits the principle of First Come first out approach.

- (a) Stack (b) Queue
 (c) Deque (d) Array

31. Sorting n elements using Bubble sort, requires _____ number of comparisons in 1st pass and _____ number of passes.

- (A) n, n - 1 (B) n - 1, n - 1
 (C) n + 1, n + 1 (D) n², n²
 (E) n/2, n/2

Choose the **correct** answer from the options given below:

- (a) (B) Only (b) (A) Only
 (c) (C) Only (d) (E) Only

32. In _____ sort, the smallest element is chosen from the unsorted array and swapped with the left most element, and that element becomes a part of the sorted array. The process continues for the next element in the unsorted array till the list is sorted.

(a) Bubble (b) Insertion
(c) Selection (d) Merge

33. Which of the following is computed on the basis of frequency of occurrence of distinct values in given data?

(a) Mean (b) Median
(c) Mode (d) Standard Deviation

34. Which of the following is not the constraint on data during insertion in table?

(a) NOT NULL (b) UNIQUE
(c) PRIMARY KEY (d) ALTERNATE KEY

35. Select the wrong topology from the following options.

(a) Ring (b) Circle
(c) Mesh (d) Tree

DIRECTIONS (Qs. 36-40) : Based on the above paragraph answer following question.

An exception is a python object that represents an error. Built-in exceptions are generated by the compiler/Interpreter. Some of built in exception are syntax error, value error, IO error, import error, EOF error, zero division error, index error, name error, indentation error. The raise statement can be used to throw an exception. The assert statement in python is used to test expression in the program code. Finally always executes its statements regardless of whether an exception occurred.

36. Built-in exception raised by which of the following.

(a) Compiler/Interpreter (b) Programmer
(c) Computer (d) Assembler

37. Which of the following exception raised when the file specified in a program statement can't be opened?

(a) Value Error (b) IO Error
(c) EOF Error (d) Name Error

38. Which of the following exception is raised when a global variable name is not defined :

(a) Type error (b) Syntax error
(c) Value error (d) Name error

39. The assert statement in python used to :

(a) To catch the exception
(b) To raise the exception
(c) To text expression in the program code
(d) Always executes the statement inside finally block

40. Which of the following about raising exceptions is not correct.

(a) Exception handlers are designed to execute when a specific exception is raised
(b) Once an exception is raised no further statement is executed in the current block
(c) It interrupts the current execution
(d) After finishing the current execution, the exception raised statement is executed

DIRECTIONS (Qs. 41-45) : Based on the above SQL table answer following question.

Consider the car INVENTORY table.

CarId	Car Name	Price	Model	Year	Type	Final Price
D001	Dzire	582613.00	CXI	2017	Petrol	652526.6
D002	Dzire	673112.00	VXI	2018	Petrol	753885.4
B001	Balero	567031.00	Signal.2	2019	Petrol	635074.7
B002	Balero	647858.00	Delta.2	2018	Petrol	725601.0
E001	EECO	355205.00	5 STR STD	2017	CNG	397829.6
E002	EECO	65491400	CARE	2018	CNG	733503.7
S001	SWIFT	514000.00	CXI	2017	Petrol	575680.0
S002	SWIFT	614000.00	VXI	2018	Petrol	687680.0

41. Which on the following SQL query is correct to select the maximum priced car from INVENTORY table?

(a) SELECT MAX (Final Price) FROM INVENTORY;
(b) SELECT LARGE (Final Price) FROM INVENTORY;
(c) SELECT HIGH (Final Price) FROM INVENTORY;
(d) SELECT AVG (Final Price) FROM INVENTORY;

42. What does following SQL query returns SELECT COUNT (DISTINCT Model) FROM INVENTORY?

(a) 2 (b) 6
(c) 8 (d) 4

43. Which of the following query Count Car Name by the no same type of car form INVENTORY table?

(a) SELECT CarName, Type FROM INVENTORY GROUP By Type;
(b) SELECT COUNT (*) "different Type" FROM INVENTORY GROUP BY Type;
(c) SELECT CarName, Model FROM INVENTORY GROUP By Type;
(d) SELECT CarName, Type FROM INVENTORY;

44. What does following query return SELECT COUNT (*) FROM INVENTORY WHERE Model = 'VXI' ;?

(a) 3 (b) 4
(c) 2 (d) 1

45. Which of the following SQL query used to delete the EECO car from INVENTORY table?

(a) DELETE FROM INVENTORY WHERE CarName = 'EECO';
(b) DROP FROM INVENTORY WHERE CarName = 'EECO';
(c) REMOVE FROM INVENTORY WHERE CarName = 'EECO';
(d) ALTER FROM INVENTORY WHERE CarName = 'EECO';

46. Which of the given device is used for conversion between analog signals and digital bits?

(a) Router (b) Modem
(c) Gateway (d) Repeater

47. Match List-I with List-II.

List-I

List-II

- | | |
|-----------------|----------------------------|
| (A) TUPLE | (I) Row in a relation |
| (B) ATTRIBUTE | (II) Number of rows |
| (C) DEGREE | (III) Column of a relation |
| (D) CARDINALITY | (IV) Number of columns |

Choose the **correct** answer from the options given below:

- (a) (A)-(I), (B)-(III), (C)-(II), (D)-(IV)
 (b) (A)-(III), (B)-(I), (C)-(II), (D)-(IV)
 (c) (A)-(I), (B)-(III), (C)-(IV), (D)-(II)
 (d) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)
48. Prefix notation of $A \wedge B \wedge C \wedge D$ will evaluate to be:
- (a) $\wedge A \wedge B \wedge CD$ (b) $ABCD \wedge \wedge$
 (c) $\wedge \wedge ABCD$ (d) $ABCD \wedge \wedge$

49. Given n values $x_1, x_2, x_3, \dots, x_n$, and their mean $\bar{x}$, the standard deviation is computed as σ having formula:

(a) $\sigma = \sqrt{\frac{\sum_{i=2}^n (x_i - \bar{x})^2}{n}}$ (b) $\sigma = \sqrt{\frac{\sum_{i=2}^n (x_i - \bar{x})^2}{n}}$

(c) $\sigma = \sqrt{\frac{\sum_{i=2}^n (x_i - \bar{x})^2}{n}}$ (d) $\sigma = \sqrt{\frac{\sum_{i=2}^n (x_i + \bar{x})^2}{n}}$

50. Find the Median of the given data set of student height (in cm).

[100, 110, 83, 107, 85, 89, 91, 100, 90]

- (a) 90 (b) 91
 (c) 100 (d) 89