Faculty Name: Mr Vinay Vilas Shahapurkar / Mrs Disha Roshan Bhakta

Dept: BSc IT

Exam Type: Regular

Sem: III

Subject: Data Structure (DS)

Sample Questions

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1. _____ is a set of characteristics of algorithm

A. Process and Input

B. Time and schedule

C. Planning and Process

D. No input and no output

2. _____ type of data structures will store data of different data types

A. Static

B. Non-Homogeneous

C. Structural

D. Homogeneous

3. Complexity of the algorithm is the _____ and _____requirement of algorithm

A. Data and information

B. File and system

C. Time and space

D. Input and output

4. If the running time of algorithm is longest for all inputs then it is called _____ complexity

A. Best case

B. Worst case

C. Average case

D. Binary case

5. The dimension of one dimensional array starts with _____

A. Zero

B. One

C. Two

D. Even numbers

6. The formula to calculate the length of array is _____

A. lb+ub

B. ub-lb+3

C. ub-lb+1

D. lb+2+ub

7. The function used to calculate the memory requirements of data type is _____

A. Getbyte()

B. Sizeof()

C. Memory()

D. Free()

8. If the base address for array A is 1000 what will be the address for A[2] considering it as integer array

A. 1000

B. 1002

C. 1004

D. 1006

9. _____operation refers to finding the position of desired element in array.

A. Insertion

B. Deletion

C. Updation

D. Searching

10. The best case of linear search is if the element is found at _____position

A. Last

B. Middle

C. First

D. Third

11. Which of the following statements is/are true about linked list?

A. Addition and deletion of an item to/ from the linked list require modification of the existing pointers

B. The linked list pointers do not provide an efficient way to search an item in the linked list

C. Linked list pointers always maintain the list in ascending order

D. The linked list data structure provides an efficient way to find kth element in the list

12. Linked lists are not suitable to for the implementation of?

A. Insertion sort

B. Radix sort

C. Polynomial manipulation

D. Binary search

13. One way linked list is also called as _____?

A. Doubly Linked List

B. Circular Linked List

C. Singular Linked List

D. Deque

14. If there is no free node in the list to insert an element then that condition is known as _____?

A. Error

B. Overflow

C. Testing

D. Underflow

15. In a circular linked list _____?

A. Components are all linked together in some sequential manner.

B. There is no beginning and no enD.

C. Components are arranged hierarchically.

D. Forward and backward traversal within the list is permitteD.

16. A linear collection of data elements where the linear node is given by means of pointer is called?

A. Linked list

B. Node list

C. Primitive list

D. Data

17. Which of the following operations is performed more efficiently by doubly linked list than by singly linked list?

A. Deleting a node whose location in given

B. Searching of an unsorted list for a given item

C. Inverting a node after the node with given location

D. Traversing a list to process each node

18. Before inserting a node we need to check _____

A. list is empty or not.

B. list exists or not

C. list can be traversed or not

D. list has to be updated

19. For _____ we need to locate the position of the node after which we want to insert the new node.

A. deleting node

B. searching node

C. inserting node

D. traversing node

20. To insert an element in sorted linked list, list should be _____

A. Existing

B. Complete

C. Full

D. Sorted

21. The prefix form of an infix expression p + q − r t* is

A. + pq − rt

B. − +pqr t*

C. − +pq*rt

D. - +*pqrt

22. In Reverse Polish notation, expression A*B+C*D is written as

A. AB*CD*+

B. A*BCD*+

C. AB*CD+*

D. A*B*CD+

23. When a stack is organized as an array, a variable named Top is used to point to the top element of the stack. Initially, the value of Top is set to_____to indicate an empty stack.

A. -1

B. 0

C. 1

D. X

24. Jan Lukasiewicz, who suggested two alternative notations to represent an arithmetic expression belonged to which nationality?

A. English

B. Polish

C. German

D. Swedish

25. The postfix form of the following infix notation is : (A + B. * (C*D − E. * F

A. AB + CD*E − *F*

B. AB+ CDE + − * F*

C. AB+ CD − EF + − **

D. ABCDEF* − + * +

26. What are the sequence of popped out values if the sequence of operations - push(1. , push(2. , pop, push(1. , push(2. , pop, pop, pop, push(2. , pop are performed on a stack.

A. 2, 2, 1, 1, 2

B. 2, 2, 1, 2, 2

C. 2, 1, 2, 2, 1

D. 2, 1, 2, 2, 2

27. In conversion from prefix to postfix using stack data-structure, if operators and operands are pushed and popped exactly once, then the run-time complexity is .....

A. O(1)

B. O(n)

C. O(log n)

D. O(n^2)

28. The result of evaluating the following postfix expression is 5, 7, 9, *, +, 4, 9, 3, /, +, -

A. 50

B. 65

C. 61

D. 70

29. n elements of a Queue are to be reversed using another queue. The number of “ADD” and “REMOVE” operations required to do so is:

A. 2*n

B. 4*n

C. n

D. The task cannot be accomplished

30. User push 1 element in the stack having already five elements and having stack size as 5 then stack becomes _____.

A. Overflow

B. Underflow

C. User Flow

D. Crash

31. Considering the value of lb=0,ub=8 the value of mid will be _____---

A. 3

B. 2

C. 5

D. 4

32. When the search element is greater than the middle element in binary search, the search will execute from _____

A. B to mid

B. Mid to UB

C. UB to LB

D. LB to UB

33. When the search element is less than the middle element in binary search, the search will execute from _____

A. LB to mid

B. Mid to UB

C. UB to LB

D. LB to UB

34. _____ tree will have maximum two children

A. Sparse

B. Dense

C. Binary

D. Twin

35. The node which does not have any child node is known as _____ node

A. Max

B. Root

C. Tertiary

D. Leaf

36. _____ tree is used to enhance the performance of binary tree

A. Tree enhancer

B. Binary search tree

C. Traversal tree

D. Sorted tree

37. The inorder traversal of tree is as _____

A. Left-right-root

B. Root-right-left

C. Left-root-right

D. Root-left-right

38. The preorder traversal of tree is as _____

A. Left-right-root

B. Root-right-left

C. Left-root-right

D. Root-left-right

39. The postorder traversal of tree is as _____

A. Left-right-root

B. Root-right-left

C. Left-root-right

D. Root-left-right

40. The node which doesn't have left and right children are _____ nodes

A. Max

B. External

C. Internal

D. Superior

41. _____ represents a sequence of edges between two vertices

A. Matrix

B. Path

C. Shortest distance

D. Span Line

42. In adjacency matrix, if the two vertices are connected to each other , their edge is represented using _____

A. 0

B. 2

C. 1

D. Infinity

43. In adjacency list, a graph is represented as array of _____

A. Keys

B. Linked lists

C. Dictionaries

D. Edges

44. When a vertex does not belong to any edges , then it is known as _____ vertex

A. Equal

B. Isolated

C. Parallel

D. Same

45. When the start and end vertex is same in a graph, _____ is formeD.

A. Open loop

B. Cycle

C. Bucket

D. Frame

46. When the vertexes are connected using specific direction it is known as _____

A. Simple graph

B. Close graph

C. Directed graph

D. Undirected graph

47. In Floyd warshall the first step will involve to remove all the _____

A. Edges

B. Vertices

C. Self loops

D. Path

48. In Floyd warshall, the vertices which have no direct edge between them are represented by _____

A. 0

B. Infinity

C. 1

D. NULL

49. A spanning tree is a subset of graph where all vertices are covered with _____ possible number of edges

A. Maximum

B. Zero

C. Minimum

D. Infinity

50. _____ algorithm uses greedy approach to find out minimum spanning tree

A. Breadth first search

B. Krushkal's

C. Genetic

D. Versatile

Sample Questions

REGULAR

Prof. Suman Upadhyay

BScIT

SEM-III

Applied Mathematics

Q. UNIT-I

1 Which of the following Matrix is scalar matrix?

a) $A = \begin{bmatrix} 4 & 0 \\ 1 & 3 \end{bmatrix}$

b) $A = \begin{bmatrix} 4 & 0 \\ 0 & 3 \end{bmatrix}$

c) $A = \begin{bmatrix} 4 & 5 \\ 1 & 3 \end{bmatrix}$

d) $A = \begin{bmatrix} 4 & 0 \\ 0 & 4 \end{bmatrix}$

2 If a matrix A is both symmetric and skew symmetric then matrix A is

a) a scalar matrix
b) a diagonal matrix
c) a zero matrix of order n × n
d) a rectangular matrix

3 To find rank of matrix using Normal form which operations are allowed

a) Only row
b) Only column
c) Both row and column
d) Row or column

4 The fourth roots of unity are:

a) $1, -1, \mathrm{i}, -\mathrm{i}$
b) $\mathrm{i}, -\mathrm{i}$
c) $1, \mathrm{i}$
d) $1, -1$

5 The argument of the number $-1 + i$ is

a) 45^0
b) 180^0
c) 90^0
d) 135^0

6 The diagonal elements of a skew symmetric matrix are

a) All zeros
b) are all equal to some scalar k(≠ 0)
c) can be any number
d) All one

7 If $A = \begin{bmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{bmatrix}$ and adj(A) is

a) $\begin{bmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{bmatrix}$

b) $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

c) $\begin{bmatrix} \cos\theta & \sin\theta \\ -\sin\theta & \cos\theta \end{bmatrix}$

d) $\begin{bmatrix} -1 & 0 \\ 0 & -1 \end{bmatrix}$

8 The value of $(1+i)^8 + (1-i)^8$

a) 32
b) 44
c) 5
d) $1 - i$

9 The period of $\sin 2\theta$

a) π
b) 2π
c) 0
d) $\frac{\pi}{2}$

10 $z + \bar{z} =$
a) 2 Re z
b) 2 Im z
c) z^2
d) 0

Q. UNIT-II

1 Determine the order and degree of the differential equation

$$2x\frac{d^4y}{dx^4} + 5x^2\left(\frac{dy}{dx}\right)^3 - xy = 0$$

a) Order $= 4$ and Degree $= 1$
b) order $= 3$ and Degree $= 1$
c) Order $= 1$ and Degree $= 4$
d) Order $= 1$ and Degree $= 3$

2 Which of the following equations is an exact differential equation?
a) $(x^2 + 1)dx + xy\,dy = 0$
b) $(x + y)dx + 2y\,dy = 0$
c) $2xy\,dx + (x^2 - 2)dy = 0$
d) $y^2\,dx + (x^2 - 2)dy = 0$

3 The Differential Equation of type $M(x,y)dx + N(x,y)dy = 0$ is said to be exact if
a) $\frac{\delta M}{\delta y} = -\frac{\delta N}{\delta x}$
b) $\frac{\delta M}{\delta y} = \frac{\delta N}{\delta x}$
c) $\frac{\delta M}{\delta x} = -\frac{\delta N}{\delta y}$
d) $\frac{\delta M}{\delta x} = \frac{\delta N}{\delta y}$

4 The general Solution of Differential Equation

$$\frac{d^2y}{dx^2} + 4\frac{dy}{dx} + 4y = 0$$

a) $y = c_1e^{-2x} + c_2e^{-2x}$
b) $y = c_1e^{-2x} + c_2xe^{-2x}$
c) $y = c_1e^{2x} + c_2e^{2x}$
d) $y = c_1e^{-2x} + c_2xe^{-3x}$

5 The particular integral of the differential equation $(D^2 + 3D + 2)y = e^{e^x}$
a) $e^{-2x}e^{e^x}$
b) e^{e^x}
c) e^{-2x}
d) e^x

6 The process of formation of the differential equation is given in the wrong order, select the correct option from below given options.
1. Eliminate the arbitrary constants.
2. Differential equation which involves x,y, dy/dx
3. Differentiating the given equation w.r.t x as many times as the number of arbitrary constants.

a) 1, 2, 3
b) 3, 2, 1
c) 3, 1, 2
d) 2, 1, 3

7 $P\,dx + x\sin y\;dy = 0$ is exact, then P is
a) $\sin y + \cos y$
b) $-\sin y$
c) $\cos y$
d) $x^2 - \cos y$

8 The particular integral of $y'' + y = \sin 4x\ is$
a) $\sin 4x$
b) $-\sin 4x$
c) $\frac{-\sin 4x}{15}$
d) $\frac{-\sin 4x}{10}$

9 If e^{-x} and xe^{-x} are fundamental solution of $\frac{d^2y}{dx^2} + a\frac{dy}{dx} + y = 0$ then value of a is
a) 2
b) 5
c) 3
d) 4

10 If $M\,dx + N\,dy = 0$ is a homogenous non-exact differential equation then
a) I.F. $= \frac{1}{Mx-Ny}$
b) I.F. $= \frac{1}{Mx}$
c) I.F. $= \frac{1}{-Ny}$
d) I.F. $= \frac{1}{Mx+Ny}$

Q. UNIT-III

1 Laplace of function $f(t)$ is given by?
a) $F(s) = \int_{-\infty}^{\infty} f(t)e^{-st}\,dt$
b) $F(s) = \int_{-\infty}^{\infty} f(t)e^{-t}\,dt$
c) $F(s) = \int_{-\infty}^{\infty} f(t)e^{-s}dt$
d) $F(s) = \int_{0}^{\infty} f(t)e^{-st}dt$

2 Laplace transform of $sin\ (at)$is?
a) $\frac{s}{a^2+s^2}$
b) $\frac{a}{a^2+s^2}$
c) $\frac{s^2}{a^2+s^2}$
d) $\frac{a^2}{a^2+s^2}$

3 Find the Laplace transform of $e^t\ Sin(t)$.
a) $\frac{a}{a^2+(s+1)^2}$
b) $\frac{a}{a^2+(s-1)^2}$
c) $\frac{s+1}{a^2+(s+1)^2}$
d) $\frac{a}{a^2+(s-1)^2}$

4 $L^{-1}\left[\frac{1}{s}\right] =$
   a) 1
   b) $\frac{1}{s}$
   c) 0
   d) $\frac{1}{s^2}$

5 If L[y(t)] =Y(s), the L[y''(t)]=
   a) $s^2y(s) - sy'(0) - y(0)$
   b) $s^2L[y(s)] - sy'(s) - y(0)$
   c) $s^2Y(s) - sy'(0) - y(0)$
   d) $s^2Y(s) - sy'(0) - y'(0)$

6 A Laplace Transform exists when _____
   a) The function is piece-wise continuous
   b) The function is of differential order
   c) The function is piecewise discrete
   d) The function is linear

7 $L(e^{3t}) =$
   a) $\frac{1}{s-3}$
   b) $\frac{1}{s+3}$
   c) $\frac{1}{s}$
   d) 1

8 Laplace transform is a
   a) linear transform
   b) binomial transform
   c) canonical transform
   d) differential transform

9 If $f(t) = 1$, then its Laplace transform is given by
   a) s
   b) $\frac{1}{s}$
   c) 1
   d) 0

10 In $L\big(f(t)\big)$, $f(t)$ is called _____ function.
   a) object
   b) compound
   c) injective
   d) surjective

Q. UNIT-IV

1 Find the value of $\iint xy\, e^{x+y}\, dx\, dy$
   a) $ye^y(xe^x - e^x)$
   b) $(ye^y - e^y)(xe^x - e^x)$
   c) $(ye^y - e^y)xe^x$
   d) $(ye^y - e^y)(xe^x + e^x)$

2 The value of $\iint xy\, dx\, dy$ over the area bounded by parabola $y = x^2$ and $x = -y^2$ is
   a) $1/67$
   b) $1/24$

c) $-1/6$
d) $-1/12$

3 The value of $\iint xy\ dx\ dy$ over the area bounded by parabola $x = 2a$ and $x^2 = 4ay$ is
a) $a^4/4$
b) $a^4/3$
c) $a^5/3$
d) $a^2/3$

4 $\int_0^\infty \int_0^\infty e^{-x^2} e^{-y^2}\ dx\ dy =$
a) $\sqrt{\frac{\pi}{2}}$
b) $\sqrt{\pi}$
c) π
d) $\pi/4$

5 The value of the integral $\int_0^2 \int_0^2 dA$
a) 4
b) 0
c) 2
d) 5

6 The value of $\int_0^3 \int_0^1 (x^2 + 3y^2) dx\ dy$
a) 10
b) 12
c) 14
d) 0

7 The value of $\int_0^1 \int_0^1 \int_0^1 e^{x+y+z}\ dx\ dy\ dz$ is
a) e
b) $e - 1$
c) $(e-1)^2$
d) $(e-1)^3$

8 Find the volume of the cylinder bounded by $x^2 + y^2 = 4$, $y + z = 4$ and $z = 0$.
a) $16\pi - \frac{32}{3}$
b) $32\pi - \frac{32}{3}$
c) $16 - \frac{32\pi}{3}$
d) $32 - \frac{32\pi}{3}$

9 The area enclosed between the graph of $y = x^3$ and the lines $x = 0, y = 1, y = 8$ is
a) 45/4
b) 14
c) 7
d) 9

10 The area of circle with centre origin and radius r is
a) $\frac{\pi}{2} a^2$
b) $\frac{\pi}{2}$
c) πa^2
d) a^2

Q. UNIT-V

1 Gamma function of $n > 0$ is defined by

a) $\int_0^\infty e^{-x}x^{n-1}\,dx$

b) $\int_0^1 x^{n-1}\,dx$

c) $\int_0^\infty e^{-x}\,dx$

d) $\int_0^1 e^{-x}x^{n-1}\,dx$

2 Beta function of m, n defined by

a) $\beta(m,n) = \int_0^\infty x^m(1-x)^n dx, \quad (m,n > 0)$

b) $\beta(m,n) = \int_0^\infty x^{m-1}(1-x)^{n-1} dx, \quad (m,n < 0)$

c) $\beta(m,n) = \int_0^1 x^m(1-x)^n dx, \quad (m,n > 0)$

d) $\beta(m,n) = \int_0^1 x^{m-1}(1-x)^{n-1} dx, \quad (m,n > 0)$

3 Which of the following is correct

a) $\beta(m,n) = \frac{\gamma(m)+\gamma(n)}{\gamma(mn)}$

b) $\beta(m,n) = \frac{\gamma(m)\gamma(n)}{\gamma(mn)}$

c) $\beta(m,n) = \frac{\gamma(m)+\gamma(n)}{\gamma(m+n)}$

d) $\beta(m,n) = \frac{\gamma(m)\gamma(n)}{\gamma(m+n)}$

4 Let $I(\alpha) = \int_a^b f(x,\alpha)dx$ where a and b are independent of α then differentiation under integral sign is given by,

a) $\frac{dI(\alpha)}{d\alpha} = \int_a^b \left[\frac{\partial}{\partial\alpha} f(x,\alpha)\right] dx$

b) $\frac{dI(\alpha)}{d\alpha} = \frac{\partial}{\partial\alpha} f(x,\alpha)$

c) $\frac{dI(\alpha)}{dx} = \int_a^b \left[\frac{\partial}{\partial\alpha} f(x,\alpha)\right] d\alpha$

d) $\frac{dI(\alpha)}{d\alpha} = \frac{\partial}{\partial\alpha}[\int_a^b f(x,\alpha)]\,dx$

5 Error function is an

a) Odd function of x

b) Even function of x

c) Neither odd nor even

d) Can't say

6 What is Duplication formula?

a) $\lceil m * \left| m + \frac{1}{2} \right. = \frac{\sqrt{\pi}}{2^{n-1}} * \sqrt{m}$

b) $\lceil m * \left| m - \frac{1}{2} \right. = \frac{\sqrt{\pi}}{2^{2n-1}} * \sqrt{m}$

c) $\lceil m * \left| m + \frac{1}{2} \right. = \frac{\sqrt{\pi}}{2^{2n-1}} * \sqrt{2m}$

d) $\lceil m * \left| m - \frac{1}{2} \right. = \frac{\sqrt{\pi}}{2^{n-1}} * \sqrt{2m}$

7 What is the value of $\int_0^1 x^5(1-x)^6 dx$?

a) $\frac{1}{12\times11\times10\times9\times8\times7}$

b) $\frac{1}{12\times11\times10\times9\times8}$

c) $\frac{1}{12\times11\times10\times9\times8\times7\times6}$

d) $\frac{1}{12\times11\times10\times9\times8\times7\times6\times5}$

8 What is another name for the gamma function?

a) Euler's integral of the first kind
b) Euler's integral of the second kind
c) The beta functions
d) The zeta function

9 Using the factorial representation of the gamma function, which of the following is the solution for the gamma function $\Gamma(n)$ when $n = 8$?

a) 5040
b) 40320
c) 362880
d) 16777216

10 The value of $\Gamma(3.5)$ is

a) $\frac{15\sqrt{\pi}}{8}$
b) $\frac{13\sqrt{\pi}}{8}$
c) $\frac{11\sqrt{\pi}}{8}$
d) $8\sqrt{\pi}$

Subject: Python Programming
Class: S.Y.B.Sc.IT
Semester: 3
Subject: Sample Questions
Name of Faculty: Asst. Prof. Himani Shukla Varia

1. Which of the following is an invalid variable?
    A. variable1
    B. var
    C. var_name
    D. 1variable

2. Which of the following can be a variable?
    A. For
    B. In
    C. While
    D. 123in
3. What is the answer to this expression, 53%24 is?
    A. 2.20833333
    B. 5
    C. 2.20
    D. 2

4. What is the output of this expression, 5*1**5?
    A. 25
    B. 75
    C. 5
    D. 1

5. What error occurs when you execute the following Python code snippet?
   apple = mango.
    A. SyntaxError
    B. NameError
    C. ValueError
    D. TypeError

6. How many keywords are in python?
    A. 45
    B. 30
    C. 33
    D. 27

7. What is the latest version of python?
    A. 3.8.0
    B. 3.9.0

C. 3.7.6
D. 3.8.5

8. Which of the following is not feature of python?
   A. easy to code
   B. statically typed language
   C. free and open source
   D. high level language

9. Which of the following results in a SyntaxError?
   A. '"Once upon a time…", she said.'
   B. "He said, 'Yes!'"
   C. '3\'
   D. "'That's okay"'

10. Which of the fallowing cannot use as identifiers in python?
    A. Function
    B. Variable
    C. Keyword
    D. Class

11. In Python, _____are a self-contained block of statements that perform single logical task.
    A. Recursion
    B. Variable
    C. Loop
    D. Function
12. Python was released publicly in-
    A. 1941
    B. 1971
    C. 1981
    D. 1991

13. Which of the following function converts the strings to all upper case?
    A. upper()
    B. title()
    C. isdecimal()
    D. lower ()

14. What will be the output of below Python code? str1="Application" str2=str1.replace('a', 'A') print(str2) .

    A. application

    B. Application

    C. ApplicAtion

    D. application

15. Which of the following function headers is correct?
    A. def fun (a = 2, b = 3, c)
    B. def fun (a = 2, b, c = 3)
    C. def fun (a, b = 2, c = 3)
    D. def fun (a, b, c = 3, d)

16. Which Function is used to open the file for reading in python?
    A. fopen(filename, mode)
    B. open(filename, mode)
    C. openfile(filename, mode)
    D. open_file(filename, mode)

17. Which of the following items are present in the function header?
    A. function name
    B. parameter list
    C. return value
    D. VOID

18. In Python Anonymous function are defined using _____keyword.
    A. Def
    B. Function
    C. Lambda
    D. Composite

19. Which of the following function convert a String to an object in python?
    A. repr(x)
    B. eval(str)
    C. tuple(s)
    D. list(s)

20. Python has _____types of Type conversion.
    A. one
    B. Two
    C. Many
    D. Three

21. What will be the output when we execute list ("Python")?
    A. ("Python)
    B. ["Python"]
    C. [Python]
    D. ['P','y','t','h','o','n']

22. Suppose list is ['h','I','e'], than what is len(list)?
    A. Error
    B. 0
    C. 3

D. -3

23. Lists are _____.
    A. Immutable
    B. Mutable
    C. Round Bracket
    D. Function.

24. If a=[10,'h',20,50], what will be sum(a)?
    A. 80
    B. 'h'
    C. Error
    D. 80h

25. What will remove( ) will result in?

```
list=[1,'h',2.5]
list.remove(2.5)
print(list)
```

    A. Error –no index value 2.5
    B. [1,'h',2.5]
    C. [1,'h']
    D. [2.5]

26. What will del method return the final value of list a?

```
a=[1,2.5,680,'kop']
del a[4]
print(a)
```

    A. [1,2.5,680,'kop']
    B. Index Value out of range
    C. [1,2.5,680]
    D. No del function in list.

27. What will pop( ) return the final value for list a?

```
a=[1,2.5,680,'kop']
a.pop()
print(a)
```

    A. Need to specify index range
    B. Need to specify element
    C. [1,2.5,680,'kop']
    D. [1,2.5,680]

28. Which method add an element to the end of the list.
    A. Extend()
    B. Insert()

C. Append()
D. Add()

29. Which method change the current file position?
    A. Seek( )
    B. Tell( )
    C. Cursor( )
    D. Position( )

30. To work with files and directories which module need to be imported?
    A. Import system
    B. Import operating system
    C. Import os
    D. Import platfom

31. Which module is required to support regular expression?
    A. regular
    B. re
    C. regex
    D. pyregular

32. Which expression is used to match the non-word character?
    A. \b
    B. \w
    C. \B
    D. \W

33. Which expression is used to match any non-whitespace character?
    A. /S
    B. \S
    C. \space
    D. /s

34. Which method is used to replace data in regular expression?
    A. Search
    B. Sub
    C. Find
    D. Compile

35. _____is used to restrict access to methods & variables in class & object.
    A. Object
    B. Encapsulation
    C. Polymorphism
    D. Destructor

36. A constructor class function is denoted or specified by-

A. __cons__
B. _init_
C. __init__
D. __init__(s)

37. The super ( ) method is used with _____function in base class.
A. Main
B. __init__
C. Class
D. def

38. _____refers to defining a new class with no modification to an existing class.
A. Static method
B. Constructor
C. Inheritance
D. Polymorphism

39. Poly means _____and Morphs means _____.
A. Many ,type
B. Form ,type
C. Many, forms
D. Structure, data

40. Any _____type can have their own methods.
A. Class
B. Object
C. Interface
D. Structure

41. To display a message dialog named "Programming is fun", use _____
A. tkinter.messagebox.showinfo("showinfo", "Programming is fun")
B. tkinter.messagebox.showwarning("showwarning", "Programming is fun")
C. tkinter.messagebox.showerror("showerror", "Programming is fun")
D. tkinter.messagebox.askyesno("ashyesno", "Programming is fun")

42. To display a warning dialog named "Variable is assigned, but not used", use _____
A. tkinter.messagebox.showinfo("showinfo", "Variable is assigned, but not used")
B. tkinter.messagebox.showwarning("showwarning", "Variable is assigned, but not used")
C. tkinter.messagebox.showerror("showerror", "PVariable is assigned, but not used"
D. tkinter.messagebox.askyesno("ashyesno", "Variable is assigned, but not used")

43. To display an error dialog named "Variable is not assigned", use _____
A. tkinter.messagebox.showinfo("showinfo", "Variable is not assigned")

B. tkinter.messagebox.showwarning("showwarning", "Variable is not assigned")
C. tkinter.messagebox.showerror("showerror", "Variable is not assigned")
D. tkinter.messagebox.askyesno("ashyesno", "Variable is not assigned")

44. To display an input dialog named "Is this an integer?", use _____
A. tkinter.messagebox.showinfo("showinfo", "Is this an integer?")
B. tkinter.messagebox.showwarning("showwarning", "Is this an integer?")
C. tkinter.messagebox.showerror("showerror", "Is this an integer?")
D. tkinter.messagebox.askyesno("ashyesno", "Is this an integer?")

45. How do you display a text "Good morning" centered at 30, 40 with color red?
A. canvas.create_text(30, 40, text = "Good morning", fill = "red")
B. canvas.create_polygon(30, 40, 50, 50, 10, 100, filled = "red")
C. canvas.create_polygon(30, 40, 50, 50, 10, 100, fill = "red")
D. canvas.create_polygon((30, 40), (50, 50), (10, 100), fill = "red")

46. How do you draw a polygon consisting of points (30, 40), (50, 50), (10, 100) filled with red color?
A. canvas.create_poly(30, 40, 50, 50, 10, 100, fill = "red")
B. canvas.create_polygon(30, 40, 50, 50, 10, 100, filled = "red")
C. canvas.create_polygon(30, 40, 50, 50, 10, 100, fill = "red")
D. canvas.create_polygon((30, 40), (50, 50), (10, 100), fill = "red")

47. How do you create an event loop?
A. window.loop()
B. window.main()
C. window.mainloop()
D. window.eventloop()

48. Config() in Python Tkinter are used for
A. destroy the widget
B. place the widget
C. change property of the widget
D. configure the widget

49. For what purpose, the bg is used in Tkinter widget?
A. To change the direction of widget
B. To change the size of widget
C. To change the color of widget
D. To change the background of widget

50. Minimum number of argument we require to pass in a function to create a line?
A. 2
B. 4

C. 6
D. 8

Asst. Prof. Sheetal Khanore
S.Y.B.Sc.IT Sem – III Computer Network
Sample MCQ
Exam: Regular semester exam Dec 2020

Unit 1

1. The _____ of a signal is its absolute value of its highest intensity proportional to the energy it carries
   a) Frequency
   b) Throughput
   c) Delay
   d) peak amplitude

2. In _____Transmission we send 1 start Bit (0) at the beginning and one or more stop bits (1s) at the end of each byte.
   a) synchronous transmission
   b) asynchronous transmission
   c) isochronous transmission
   d) Chronos transmission

3. Which of the following shows the correct arrangement of networks from the smallest to the largest network?
   a) LAN, WAN, MAN
   b) LAN, MAN, WAN
   c) WAN, MAN, LAN
   d) WAN, LAN, MAN

4. Maximum data rate at which the digital data can be transmitted over the channel reliably is called as _____.
   a) Data Rate
   b) Error Rate
   c) Noise
   d) Channel Capacity

5. _____ modulation is a low noise process and provides a high quality modulation technique which is used for music and speech
   a) AM
   b) FM
   c) PM
   d) CM
6. Which of the following is not one of the components of a data communication system?

   a) Message
   b) Sender
   c) Communication
   d) receiver
7. TCP is _____

a) transmission control protocol
b) transfer control protocol
c) transfer communication protocol
d) transmission communication protocol

9. _____ data have discrete states and take discrete values.

a) analog
b) digital
c) analog or digital
d) analog and digital

10. Two common scrambling techniques are _____.
a) NRZ and RZ
b) AMI and NRZ
c) B8ZS and HDB3
d) Manchester and differential Manchester

Unit -2

11. The _____ technique expands the bandwidth of a signal by replacing each data bit with n bits using a spreading code.
a) FDM
b) DSSS
c) FHSS
d) TDM

12. FHSS uses _____
a) Frequency synthesizer
b) Multiplexer
c) Hopping machine
d) De-multiplexer

13. In other words, each bit is assigned a code of *n* bits, called _____ .
a) Chips
b) Node
c) Spectrum
d) Period

14. Which of the following is guided media?
a) UTP cable
b) Microwave
c) Radio wave
d) Bluetooth

15. The types of fiber optic cable propagation modes are _____ .
a) Multimode- Single mode
b) Simplex – duplex
c) Half duplex – full duplex
d) Single – double

16. In a _____network, each packet in a message may follow a different path.
a) datagram

b) virtual-circuit
c) circuit-switched
d) Ring

17. Packet switching can be divided into _____ categories.
    a) two
    b) three
    c) four
    d) five
18. MAC is _____
    a) Media Address control
    b) Media Access control
    c) Media Address communication
    d) Media Access coordination
19. An ARP reply is normally _____.
    a) broadcast
    b) multicast
    c) unicast
    d) anycast

20. Data-link layer of a point-to-point link has _____ sublayer(s).
    a) one
    b) two
    c) no
    d) four

Unit 3

21. _____ means the sending station must not send frames at a rate faster than the receiving station can absorb them
    a) error control
    b) frame control
    c) data control
    d) flow control

22. In _____ the available bandwidth of a link is divided into frequency bands
    a) CDMA
    b) TDMA
    c) FDMA
    d) SDMA
23. If sender does not receive ACK for previous sent frame after a certain period of time. This scenario is called as _____
    a) Transmission complete
    b) Positive ACK
    c) Negative ACK
    d) Time Out
24. The _____ system is a contention protocol which was developed at the university of Hawaii in early 1970.

a) Multi Access
b) CSMA
c) ALOHA
d) Single Access

25. What SFD stands in Traditional Ethernet
    a) Set Frame Divider
    b) Start Frame Delimiter
    c) Set Frame Delimiter
    d) Start Frame Data

26. In Cellular system cluster contains _____ cells.
    a) 5
    b) 8
    c) 7
    d) 4

27. _____ in the data link layer separates a message from one source to a destination, or from other messages going from other sources to other destinations.
    a) Digitizing
    b) Controlling
    c) Framing
    d) decapsulation
28. In the _____ method, a station needs to make a reservation before sending data. Time is divided into intervals.
    a) reservation
    b) polling
    c) token passing
    d) FDMA
29. _____ uses fiber-optic cable.
    a) 10Base5
    b) 10Base2
    c) 10Base-T
    d) 10Base-F
30. Bluetooth with multiple _____ form a network called a _____.
    a) scatternet; piconets
    b) piconets: scatternet
    c) piconets: bluenet
    d) bluenet; scatternet

Unit 4

31. _____Routing table is the one that is created once manually but it is updated automatically whenever there is some change in the internet

    a) Static
    b) Dynamic
    c) Modified

d) updated

32. In _____ the destination host and the source host are in the different physical network.
    a) Presentation
    b) Network
    c) Data-Link
    d) Physical

33. 110|Network|Host - address format is called as _____.
    a) Class A
    b) Class B
    c) Class C
    d) Class D

34. _____ this field in 4 bit long and defines the version of IP.
    a) DS
    b) VER
    c) HLEN
    d) Flags

35. OSPF packet format doesn't contain.
    a) Version
    b) Source router IP Address
    c) Destination router IP Address
    d) Checksum

36. The _____ technique is one of the open-loop congestion policies.
    a) backpressure
    b) choke packet
    c) implicit signaling
    d) retransmission policy

37. IP is a _____ protocol.
    a) connection-oriented unreliable
    b) connection-oriented reliable
    c) connectionless unreliable
    d) connectionless reliable

38. Routing inside an autonomous system is referred to as _____ routing.
    a) inter-domain
    b) intra-domain
    c) out-of-domain
    d) inner-domain

39. In OSPF, a _____ link is a network connected to only one router.
    a) point-to-point
    b) transient
    c) stub
    d) star

40. In IPv6, the _____ field in the base header restricts the lifetime of a datagram.
    a) version
    b) priority
    c) hop limit
    d) flow count

Unit 5

41. In case of_____ a logical window is maintained in the buffer of the sender
    a) user datagram protocol
    b) sliding window protocol
    c) transmission control protocol
    d) simple protocol

42. _____ Is a protocol used mainly to access web pages on the world wide web
    a) HTML
    b) web documents
    c) HTTP
    d) Webpages

43. Below are the duties of Transport layer
    A) Addressing
    B) Packetizing
    C) Flow Control
    D) Framing
    a) A & B & C
    b) B & C & D
    c) B & C
    d) A & C & D

44. _____ is used for identifying the current position of the first data byte in the segment with in the entire TCP connection
    a) Sequence Number
    b) Acknowledgement Number
    c) checksum
    d) Padding

45. To map a name to IP address, an application program calls a library procedure called as _____.
    a) Target
    b) Mapper
    c) Server
    d) Resolver

46. A standard mechanism provided by internet which helps in copying a file from one host to another is known as _____.
    a) SMTP
    b) FTP
    c) DNS server
    d) Telnet

47. This timer is used to deal with the situation when the receiver advertises the window size as 0 that leads to window shut down at the sender
    a) time wait
    b) keepalive
    c) Retransmission
    d) Persistent

48. UDP is an acronym for _____.
    a) user delivery protocol
    b) user datagram procedure
    c) user datagram protocol
    d) none of the choices are correct

49. A _____ server is a computer that transfers the complete information about a zone from another server.
    a) primary
    b) secondary
    c) zone
    d) root

50. When a user wants to access an application program or utility located on a remote machine, he or she performs _____ login.
    a) local
    b) remote
    c) local or remote
    d) guest

SAMPLE QUESTIONS

Class: SYBScIT- SEM III

Subject: DATABASE MANAGEMENT SYSTEM

Unit I

Chapter 1: INTRODUCTION TO DATABASES AND TRANSACTIONS

1. Which of the following can be a multivalued attribute?
   a. Phone number
   b. Date of birth
   c. Name
   d. Age

2. Which among the following statement is true?
   a. An Entity is an object of Entity Type and set of all entities is called as entity set.
   b. Attributes are the properties which define the data type.
   c. Tables are also known as tuples in DBMS.
   d. A set of records with different attributes is called a table.

3. The number of times an entity of an entity set participates in a relationship set is known as
   a. Cardinality
   b. Degree
   c. Table
   d. Tuple

Chapter 2- Data Models

4. There are …… levels of data abstraction.

    a. 3
    b. 2
    c. 4
    d. 1

5. In Relational Models, rows are referred to as ……. and columns are referred to as …….

    a. Attributes, tuples
    b. Tuples, Attributes
    c. Connectors, nodes
    d. Nodes, connectors

6. The relational model feature is that there

    a. is no need for primary key data
    b. is much more data independence than some other database models
    c. are explicit relationships among records
    d. are tables with many dimensions.

Chapter 03: Database design, ER Diagram and UML

7. A relationship where two entities are participating is called as _____.

a. Binary Relationship
b. Unary Relationship
c. Many to One Relationship
d. One to Many Relationship

8. The term _____ refers to the uniqueness of data values contained in a particular tuple of the database.

a. Integrity
b. Mapping
c. Cardinality
d. Constraints

9. The designer must determine what data to be stored in the _____.

a. Database
b. Table
c. UML
d. Metadata

10. In database the ____ values must be given a systematic and uniform treatment.

a. Default
b. Primary
c. Unique
d. NULL

****

UNIT II

Chapter 4: Relational Model

1. If every non-key attribute is functionally dependent primary key, then the relation will be in
    a. First normal form
    b. Second normal form
    c. Third form
    d. Fourth normal form

2. If an attribute of a composite key is dependent on an attribute of the other composite key, a normalization called _____ is needed.

    a. Second
    b. BCNF
    c. Fourth
    d. Third

3. A dependency exists between two columns when

    a. Together they constitute a composite key for the table
    b. Knowing the value in one column determines the value stored in another column
    c. The table is in 3NF
    d. Together they constitute a foreign key

CHAPTER 5: RELATIONAL DATABASE MODEL

4. Data Manipulation Language (DML) is not to

    a. Create information table in the Database
    b. Insertion of new information into the Database.
    c. Deletion of information in the Database.
    d. Modification of information in the Database.

5. Which of the following in true regarding Referential Integrity?
   a. Every primary-key value must match a primary-key value in an associated table.
   b. Every primary-key value must match a foreign-key value in an associated table.
   c. Every foreign-key value must match a primary-key value in an associated table.
   d. Every foreign-key value must match a foreign-key value in an associated table.

6. Domain constraints, functional dependency and referential integrity are special forms of _____.

   a. Foreign key
   b. Primary Key
   c. Assertion
   d. Referential Constraint

7. A attribute in a relation is a foreign key if the _____ key from one relation is used as an attribute in that relation.

   a. Candidate
   b. Primary
   c. Super
   d. Alternate

CHAPTER 6: CALCULUS

8. Cartesian product in relational algebra is_____.

a. Unary operator
b. Binary operator
c. Ternary operator
d. Selection

9. The operation which is not considered a basic operation of relational algebra is_____

a. Join
b. Selection
c. Union
d. Cross product

10. Which of the following constitutes a basic set of operations for manipulating relational data?

a. Predicate calculus
b. Relational calculus
c. Relational algebra
d. SQL

****

Unit III

CHAPTER – 7: CONSTRAINTS, VIEW & SQL

1. To compare list of values, range _____ constraint is used.
   a) Unique
   b) Check
   c) Default
   d) Primary

2. Count () in SQL returns a number of _____.
   a) Columns
   b) Rows
   c) Distinct values
   d) Keys

3. The statement in SQL which allows to change the definition of a table is _____
   a) Alter
   b) Drop
   c) Create
   d) Select

4. All columns in a table are by default _____
   a) Nullable
   b) Not Nullable
   c) Zero
   d) Empty

5. Which of the following is not a comparison operator in SQL?
   a) =
   b) LIKE

c) BETWEEN
d) :=

6. The _____ operator is used to compare a value to a list of literals values that have been specified.
   a) BETWEEN
   b) ANY
   c) ALL
   d) IN

7. _____ function divides one numeric expression by another and returns the remainder.
   a) Power()
   b) Mod()
   c) Round()
   d) Remainder()

8. A data manipulation command the combines the records from one or more tables is called _____
   a) JOIN
   b) PROJECT
   c) SELECT
   d) MINUS

9. View can be created by using the following syntax
   a) CREATE OR UPDATE VIEW view_name AS
      SELECT column_name(s)
      FROM table_name
      WHERE condition

   b) UPDATE OR REPLACE VIEW view_name AS
      SELECT column_name(s)

FROM table_name
WHERE condition

c) CREATE OR REPLACE VIEW view_name AS
SELECT column_name(s)
FROM table_name
WHERE condition

d) REPLACE OR UPDATE VIEW view_name AS
SELECT column_name(s)
FROM table_name
WHERE condition

10. _____ data type can store unstructured data.
    a) Raw
    b) Char
    c) Numeric
    d) Byte

11. Materialized views make sure that
    a) View definition is kept stable
    b) View definition is kept up-to-date
    c) View definition is verified for error
    d) View is deleted after specified time

****

Unit IV

Chapter 8: Transaction Management & Concurrency Control

1.What is 2PL?

a.Two Parts locking

b.Two phase leak

c.Two protection lock

d. Two phase locking

2.Which component ensures automicity and durabily?

a.backup recovery

b.recovery manager

c.management

d.transaction manager

3. What is the full form of ACID properties of transaction?

a.automicity,concurrency,Insulated,Design

b.automatic,consistency,isolated,designation

c.atomicity,consistency,isolation,durability

d.automatic,consist,informative,duration

4. In which state,transaction will wait for final statement has been excecuted?

a.partially committed

b.active

c.failed

d.aborted

5.Which protocol permits release of exclusive locks only at the end of transaction?

a.two phase locking protocol

b.rigourous two phase locking protocol

c. strict two phase locking protocol

d.graph based protocol

6. In 2PL If a transaction may obtain locks but may not release any locks then Transaction is in

a.Initial Phase

b.Growing Phase

c.Shrinking Phase

d.Deadlock phase

7 .In timestamp ordering protocol, suppose that the transaction Ti issues read(X) and TS(Ti)>W-timestamp(X), then_____

a.Read operation is executed

b.Read operation is rejected

c.Write operation is rejected

d.Write operation is executed

8.Suppose transaction T1 and T2 are deadlocked, how we can recover from deadlock?

a.By abort both transactions

b.By rollback both transactions

c.By rollback one of transaction involve in deadlock

d.By committing one transaction

9. W-timestamp(Q) denotes

a.The largest timestamp of any transaction that can execute write(Q) successfully

b.The largest timestamp of any transaction that can execute read(Q) successfully

c.The smallest timestamp of any transaction that can execute write(Q) successfully

d.The smallest timestamp of any transaction that can execute read(Q) successfully

10.If two transactions T1 and T2 both read the same data and update it then effect of first update will be overwritten by the second update is known as_____

a.Race Condition

b.Run Situation

c.Concurrent Access

d.consistency

****

Unit V

Chapter 9: PL/SQL

1. Find invalid Scalar datatypes
   a. NUMBER
   b. VARCHAR2
   c. RECORD
   d. LONG

2. Which section in PL/SQL is mandatory
   a. Declaration
   b. Cursor Declaration
   c. Execution
   d. Exception

3. _____ is an error handling part of PL/SQL.
   a. Trigger
   b. Exception
   c. Subprogram
   d. anonymous block

4. Advantage of using an index
   a. Reliability
   b. less Storage
   c. Faster access of data blocks
   d. Useless

5. What is the difference between execution of trigger and stored procedures?
   a. trigger is easy to execute than procedure
   b. procedure is easy to execute than trigger
   c. trigger is automatically executed, while procedure is explicitly invoked by user
   d. no different in execution process of trigger and procedure

6. Which command is used to delete a trigger?
   a. DELETE TRIGGER
   b. DROP TRIGGER
   c. REMOVE TRIGGER
   d. STOP TRIGGER

7. What are the different schemas objects that can be created using PL/SQL?
   a. packages
   b. triggers
   c. tables
   d. cursors

8. What are the two different parts of the PL/SQL packages?
   a. Declaration, Execution
   b. Head, Body
   c. Specification, Body
   d. Sql, Pl/Sql

9. _____ error can be easily detected by a PL/SQL compiler.
   a. syntax
   b. runtime
   c. non syntax
   d. declare

10. _____attribute is used to declare a variable to be a record having the same structure as a row in a table.
    a. %TYPE
    b. %COLUMNTYPE
    c. %ROWTYPE
    d. %ROW

****