

**Pune Vidyarthi Griha's
College of Science & Technology**

**Semester Examination Nov 2020
Information Technology (Semester III)**

Subject – DS

Date:

1. _____ is raw, unorganized facts that need to be processed.
 - A. Information
 - B. Data
 - C. File
 - D. Database

2. Datatype is an attribute which tells _____ or _____ on how programmer wants to use data.
 - A. Keyboard, monitor
 - B. Input, output
 - C. Compiler, interpreter
 - D. Libraries, Macros

3. _____ feature will allow providing data and operations together
 - A. Lists
 - B. Set
 - C. Encapsulation
 - D. Polymorphism

4. _____ data structures will have fixed memory allocation and memory taken by them cannot be increased or decreased at runtime
 - A. Linear
 - B. Static
 - C. Homogeneous
 - D. Logical

5. _____ data structures will store data of similar type.
 - A. Non-Linear
 - B. Dynamic
 - C. Homogeneous

D. Physical

6. _____ will store and sort the data in contiguous block within files on disk.

A. Sequential

B. Binary

C. Random

D. Direct Access

7. Data structures work in _____ memory location

A. ROM

B. SDD

C. RAM

D. Tapes

8. _____ is an operation of data structure where every element is visited exactly only once.

A. Insertion

B. Deletion

C. Updation

D. Traversal

9. _____ data structures will have fixed memory allocation and memory taken by them can be increased or decreased at runtime

A. Linear

B. Homogeneous

C. Dynamic

D. Static

10. _____ can be defined as finite collection of well-defined steps to solve a particular problem.

A. Files

B. Algorithm

C. Information

D. Data

11. Circular linked list consists of:

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

B. No beginning and no end.

C. Components are arranged hierarchically.

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

12. Which task is carried efficiently by doubly linked list than by singly linked list?

A. Deleting a node whose location is 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

13. What is the second field that each node consists of in Linked List where first node is used to store data?

A. Pointer to character

B. Pointer to integer

C. Pointer to node

D. Node

14. Consider the following definition in C programming language

struct node

{

int data;

struct node * next;

}

typedef struct node NODE;

NODE *ptr;

15. Which of the following C code is used to create new node?

A. ptr=(NODE*)malloc(sizeof(NODE));

B. ptr=(NODE*)malloc(NODE);

C. ptr=(NODE*)malloc(sizeof(NODE*));

D. ptr=(NODE)malloc(sizeof(NODE));

16. Which is the type of linked list in which last node of the list points to the first node of the list?

A. Singly linked list

B. Doubly linked list

C. Circular linked list

D. Multiply linked list

17. How does traversal is being performed in doubly linked lists?

A. Only in forward direction

B. Only in reverse direction

C. In both directions

D. In any direction.

18. What type of linked list suits to line: "Which is the item at position x?"

A. Singly linked list

B. Doubly linked list

C. Circular linked list

D. Array implementation of linked list

19. A variation of linked list is circular linked list, in which the last node in the list points to first node of the list. One problem with this type of list is?

A. It waste memory space since the pointer head already points to the first node and thus the list node does not need to point to the first node.

B. It is not possible to add a node at the end of the list.

C. It is difficult to traverse the list as the pointer of the last node is now not NULL

D. There is no as such any problem

20. A variant of the linked list in which none of the node contains NULL pointer is?

A. Singly linked list

B. Doubly linked list

C. Circular linked list

D. Array representation of linked list.

21) Choose correct output for the following sequence of operations.

push(5)

push(8)

pop

push(2)

push(5)

pop

pop

pop

push(1)

pop

A. 8 5 2 5 1

B. 8 5 5 2 1

C. 2 5 5 1

D. 8 1 2 5 5

22) Postfix form of following expression: $D + (E * F)$

- A. $EF * D+$
- B. $DEF * +$
- C. $DEF +*$
- D. $EFD *+$

23) Stack data structure cannot be used for

- A. Implementation of Recursive Function
- B. Allocation Resources and Scheduling
- C. Reversing string
- D. Evaluation of string in postfix form

24) A queue data-structure can be used for –

- A. Expression parsing
- B. Recursion
- C. Resource allocation
- D. Traversing

25) If queue is implemented using arrays, what would be the worst run time complexity of queue and dequeue operations?

- A. $O(n)$, $O(n)$
- B. $O(n)$, $O(1)$
- C. $O(1)$, $O(n)$
- D. $O(1)$, $O(1)$

26) Prefix notation is also known as

- A. Reverse Polish Notation
- B. Reverse Notation
- C. Polish Reverse Notation
- D. Polish Notation

27) Which data structure is used in breadth first search of a graph to hold nodes?

- A. Stack

B. Queue

C. Tree

D. Array

28) A data structure where elements can be added or removed at either end but not in the middle is called ...

A. Linked Lists

B. Stacks

C. Queues

D. Dequeue

29) In a priority queue, insertion and deletion takes place at

A. front, rear end

B. only at rear end

C. only at front end

D. any position

30) The postfix form of the expression $(A + B) * (C * D - E) * F / G$ is

A. $AB + CD * E - FG /**$

B. $/ AB + CD * E - F **G /$

C. $AB + CD * E - *F * G /$

D. $AB + CDE * - * F * G /$

31. The arrangement of data in an order way is known as _____

A. Traversing

B. Inserting

C. Sorting

D. Merging

32. _____ is a series of instruction to arrange the data in either ascending or descending order

A. Algorithm

B. Program

C. Machine Instructions

D. Sorting Algorithm

33. Ascending order sorting, will swap the current element with the next one , if the current element is _____

- A. Equal
- B. Smaller
- C. Greater
- D. Null

34. In bubble sort the last index value will be its correct position after the _____ iteration

- A. Last
- B. First
- C. Middle
- D. Half

35. The sort which works on comparison of key element is _____

- A. Bubble
- B. Merge
- C. Insertion
- D. Simple

36. After each iteration _____ value is placed in front of unsorted list

- A. Maximum
- B. Minimum
- C. Zero
- D. Null

37. In _____ sort two unsorted array will create a sorted array

- A. Bubble
- B. Selection
- C. Merge
- D. Insertion

38. The last index of array is represented using _____

- A. Bound
- B. Upper bound
- C. Lower bound
- D. Last value

39. _____ search will require data to be not sorted

- A. Linear Search

- B. Binary Search
- C. Simple Search
- D. Complex Search

40. The worst case of linear search is when data to be searched is located at _____ index position

- A. First
- B. Middle
- C. Last
- D. Third

41. When a hash function maps to two different keys in the same table _____ occurs.

- A. Intersect
- B. Parallel
- C. Collision
- D. Resolution

42. When an identifier get mapped into a full bucket _____ will occur

- A. Underflow
- B. Overflow
- C. Full
- D. Nullify

43. In _____ hashing method we square the key and take the number of digits required to form address

- A. Square Method
- B. Square Hash
- C. Mid Square
- D. Two Square

44. In _____ method the reverse values of outer parts of keys are added

- A. Fold boundary
- B. Fold shifting
- C. Reverse fold
- D. Fold reverse

45. Using linear probing considering the key as 89 and value of hash table as 10 , the index hash value formed will be _____

- A. 10
- B. 8
- C. 9
- D. 89

46. _____ is used to resolve collisions in open addressed has tables

- A. Hash resolve
- B. Probing
- C. Double hashing
- D. Quick hashing

47. _____ is a block of space large enough to hold multiple values

- A. Tray
- B. Bucket
- C. List
- D. Cache

48. As soon as the hash table is half full , _____ -should be performed

- A. Collision
- B. Parallel
- C. Rehash
- D. Naïve hash

49. The graph in data structure is a set of _____ and _____

- A. Lines and bars
- B. Columns and lines
- C. Vertices and edges
- D. Circles and square

50. When two vertices are connected through an edge they are known as _____ with each other

- A. Not adjacent
- B. Parallel
- C. Adjacent
- D. Collide

