

- 1) _____ is a fixed space component
 - a) compile time
 - b) run time
 - c) execution time
 - d) All the above
- 2) _____ is a finite set of instruction^s that accomplish a particular task.
 - a) program
 - b) algorithm
 - c) flowchart
 - d) all the above
- 3) The evaluation of expression is the application of
 - a) stacks
 - b) queues
 - c) circular queue
 - d) linked list
- 4) Insertion and deletion at front, rear and in between are possible in
 - a) queue
 - b) circular queue
 - c) linked list
 - d) all the above
- 5) A full binary of binary depth 4 contains _____ nodes
 - a) 8
 - b) 12
 - c) 15
 - d) 16
- 6) Root is having level
 - a) 0
 - b) 1
 - c) 2
 - d) 3
- 7) The length of a path in a graph is the number of _____ in it
 - a) subgraph
 - b) vertices
 - c) edges
 - d) all the above
- 8) A strongly connected compound is a maximal
 - a) vertices
 - b) edges
 - c) sub graph
 - d) adjacent vertex
- 9) A graph with n edges its spanning tree has _____ edges
 - a) 2n
 - b) 2n-1
 - c) n-1
 - d) n/2
- 10) Quick sort takes _____ Time
 - a) O(n)
 - b) log(n)
 - c) O(nlogn)
 - d) O(mn)

PART B (5 x 5 = 25 marks)

Answer ALL questions choosing either (a) or (b)

Either answer should not exceed 250 words

11)a) Explain the performance analysis of an algorithm with reference to space complexity.

(OR)

b) with suitable example explain the advantages of ADT

12)a) with algorithm explain the procedure to add and delete an element in a circular queue.

(OR)

b) Define sparse matrix explain the linked representation of the same

13)a) Define a tree and explain the give the list representation of the same .

(OR)

b) with suitable example explain the procedure to convert a forest into a binary tree

14)a) With suitable example explain adjacency multiple list

(OR)

b) Define graph . Explain cyclic and acyclic graph

15)a) Explain sequential search with algorithm.

(OR)

b) Define hashing and explain hash table with example

PART B (5 x 8 = 40 marks)

Answer ALL questions choosing either (a) or (b)

Either answer should not exceed 600 words

16) a) Explain abstract data types with example with reference to the categories of function of the data types.

(OR)

b) Give an account of arrays

17)a) with suitable algorithm explain the procedure to add two polynomials

(OR)

b) Define singly linked list and its representation give the procedure to add and delete an element in a singly linked list

18)a) what is a heap? Give example with addition and deletion of an element in a heap

(OR)

b) Explain in detail the binary tree traversal

19)a) Explain in detail the Kruskal's algorithm to construct minimum spanning trees

(OR)

b) With suitable example explain shortest path and transitive closure

20)a) Give an account of quick sort

(OR)

b) With suitable example and algorithm explain merge sort