

TIME: 40 minutes

MAXIMUM MARKS: 30

SEM	SET	PAPER CODE	TITLE OF THE PAPER
II	2014	14UBC230205	DATA STRUCTURES AND ALGORITHMS

SECTION - A**Answer all the questions:****30 × 1 = 30****Choose the correct answer:**

- The logical or mathematical model of a particular organization of data is called a _____.
 - Data set
 - Data model
 - Data structure
 - Data base
- A queue operates _____ on basis.
 - LIFO
 - FIFO
 - LILO
 - FILO
- Arranging the elements in some type of order is called _____.
 - Searching
 - Merging
 - Inserting
 - Sorting
- Address of the first element of linear array is called _____.
 - Initial address
 - Final address
 - Base address
 - Intermediate address
- Linear search is also termed as _____.
 - Random search
 - Binary search
 - Sequential search
 - None of the above

6. The length of an array is given by the formula _____.
- a) Length = $UB-LB+1$ b) Length = $UB+LB+1$
c) Length = $UB-LB-1$ d) Length = $UB+LB$
7. A linked list is a linear collection of data elements called _____.
- a) Edges b) Blocks
c) Nodes d) Segments
8. A linked list is called as a _____.
- a) One-way list b) Two-way list
c) Multi-way list d) Broad-way list
9. Each node of a linked list has two parts-information part and _____ part.
- a) Next pointer b) Prev pointer
c) Mid pointer d) None of the above
10. A special list in memory that consists of unused memory cells is called _____.
- a) Storage cell b) Available pool
c) Storage pool d) Free pool
11. Any technique that collects all the deleted space on the free storage list in memory is known as _____.
- a) Storage collection b) Garbage collection
c) Memory collection d) None of the above
12. _____ refers to a situation where one wants to delete data from a data structure that is empty.
- a) Overflow b) Underflow
c) Randomflow d) Freeflow
13. Polish notation is called as _____.
- a) Prefix notation b) Infix notation
c) Postfix notation d) Multifix notation
14. The postfix expression for $A+(B*C)$ is _____.
- a) $AB*+C$ b) $AB*C+$ c) $A*BC+$ d) $ABC*+$

15. In a queue insertions take place at _____.
- a) Front
 - b) Rear
 - c) Top
 - d) Bottom
16. A _____ is a first-in-first-out list.
- a) Stack
 - b) Linked list
 - c) Queue
 - d) Linked stack
17. In a stack elements are inserted and deleted at the _____ of the stack.
- a) Top
 - b) Middle
 - c) Bottom
 - d) Front
18. A stack underflow occurs when _____.
- a) $\text{Top} = \text{MAXIMUMSTACK}$
 - b) $\text{Top} = \text{MAXIMUMSTACK} - 1$
 - c) $\text{Top} = 0$
 - d) None of the above
19. In a binary tree the nodes with no successors are called _____ nodes.
- a) Terminal
 - b) Non-terminal
 - c) Successor
 - d) Predecessor
20. A terminal node is called a _____ node.
- a) Internal
 - b) Leaf
 - c) Non-leaf
 - d) None of the above
21. If the value of the parent is greater than or equal to the value of its children then it is called a _____.
- a) Minheap
 - b) Subheap
 - c) Maxheap
 - d) Superheap
22. The average case complexity of insertion sort is _____.
- a) $\log n$
 - b) $\log(n-1)$
 - c) $O(n)$
 - d) $O(n^2)$
23. In a post order traversal _____ is traversed first.
- a) Left subtree
 - b) Right subtree
 - c) Root
 - d) All of the above

24. Node L is called a _____ of a node N if there is a succession of children from N to L.
- a) Ancestor
 - b) Descendent
 - c) Parent
 - d) Sibling
25. Cannibals and missionaries problem uses _____ the methods.
- a) Subgoals
 - b) Hill climbing
 - c) Working backward
 - d) All the above
26. Reduction of a difficult problem into a sequence of simpler problem involves _____ method.
- a) Subgoals
 - b) Hill climbing
 - c) Working backward
 - d) None of the above
27. The 8-puzzle problem contains _____ squares.
- a) 8
 - b) 7
 - c) 9
 - d) 10
28. Travelling salesman problem is an example of _____ technique.
- a) Backtracking
 - b) Branch and bound
 - c) Hill climbing
 - d) None of the above
29. The basic step in the computation of lower bounds is known as _____.
- a) Reduction
 - b) Production
 - c) Application
 - d) Generation
30. _____ technique is often called a “method of last resort”.
- a) Branch and bound
 - b) Hill climbing
 - c) Back tracking
 - d) Heuristics
