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4th Sem. / Comp
Subject : Data Structures Using C

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Multiple choice Questions. All Questions are compulsory. (10x1=10)

Q.1 Which of the following is the correct ways of declaring a float pointer.

a) float ptr; b) float *ptr;

c) *float ptr; d) None of the above

Q.2 Length of Linear array is calculated as

a) UB-LB+1 b) UB-LB-1

c) UB+LB+1 d) All of the above

Q.3 The memory address of the first element of the array is called

a) First address b) Floor address

c) Foundation Address d) Base Address

Q.4 A _____ Linked list is a linked list in which each node has a pointer to both its successor and predecessor

a) Circularly b) Doubly

c) Linear d) Sequential

Q5. In a linked list, the pointer of the last node contains special value, called the_Pointer

a) NULL b) ZERO

c) LINK d) NEXT POINTER

Q.6 Which of the following data structures allow insertion and deletion from both ends?

a) Stack b) Deque

c) Queue d) Strings

Q.7 _____ is a pile in which items are added at one end and removed from the other.

a) Stack b) Queue

c) List d) None of the above

Q.8 Which of the following is not a type of queue.

a) Simple Queue b) Single ended queue

c) Circular Queue d) Priority Queue

Q.9 Which of the following is a Divide and Conquer algorithm?

a) Bubble b) Selection

c) Quick d) Heap

Q.10 In _____ search the list must be sorted first.

a) Linear b) Binary

c) Sequential d) None of the above

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Define data structure.

Q.12 Define constant.

Q.13 Define Queue.

Q.14 What is debugging.

Q.15 Define Recursion.

Q.16 LIFO stands for _____.

Q.17 Define priority queue.

Q.18 Define height of a tree.

Q.19 What is sparse matrix?

Q.20 What is sorting?

SECTION-C

Note: Short answer type Questions. Attempt any twelve questions out of fifteen Questions. (12x5=60)

Q.21 Describe the program Development Life Cycle.

Q.22 Explain different type of queues.

Q.23 What is stack? Discuss operations performed on stack.

Q.24 What are the conditions for overflow and underflow in data structures?

Q25 Define traversing. Write down an algorithm to traverse an array.

Q.26 Write an algorithm for performing PUSH and POP on stack.

Q.27 Write down the different operations performed on queue.

Q.28 Write short notes on : Full Binary tree, Complete Binary tree and Extended Binary tree.

Q.29 Write down algorithm for selection sort technique with suitable example.

Q.30 Write an algorithm to insert a node at the end of linked list.

Q.31 Describe the concept of Linked List with terminologies: Node, Nextpointer, NULL pointer and empty list.

Q.32 Write a program in C to print Fibonacci series upto 10 terms using recursion.

Q.33 What is heap sort. Explain with suitable example.

Q.34 Write an algorithm to add two matrices.

Q.35 Write down binary search algorithm.

SECTION-D

Note: Long answer questions. Attempt any two questions out of three Questions. (2x10=20)

Q.36 What is primitive and Non Primitive data structure? Explain in detail.

Q.37 Describe the different structural programming constructs.

Q.38 Write algorithm to evaluate the postfix expression, and Evaluate arithmetic expression written in Postfix notation : P: 12, 7, 3, -, 2, 1, 5, +, *, +