No. of Printed Pages : 4 220843
Roll No. .....

4th Sem./ Computer, Computer
(For Speech and Hearing Impaired)
Subject : Data Structure Using C

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 The situation when in a linked list START=NULL is (CO2)

a) Overflow b) Underflow
c) Saturated d) House full

Q.2 Which of the following real world scenarios would you associate with a stack data structure? (CO3)

a) Pilling up of plates one above the other
b) people standing in a line to be serviced at a counter
c) offer services based on the priority of the customer
d) Tatkal Ticket Booking in IRCTC

Q.3 What is the term for inserting into a full queue known as ? (CO3)

a) Overflow b) Underflow

c) null pointer exception
d) program won't be compiled

Q.4 To obtain a prefix expression, which of the tree traversals is used? (CO4)

a) Level-order traversal
b) Pre-order traversal
c) Post-order traversal
d) In-order traversal

Q.5 What is the other name for a postfix expression?

a) Normal polish Notation
b) Reverse polish Notation
c) Warsaw notation
d) Infix notation

Q.6 Which matrix has most of the element (not all) as Zero?

a) Identity Matrix b) Unit Matrix
c) Sparse Matrix d) Zero Matrix

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 _____ variables are accessed by all modules of the C program. (CO1)

Q.8 Give formula to calculate address of an element in ROW MAJOR Representation of array. (CO2)

Q.9 If FRONT== REAR it indicates that the queue is_____ (CO3)

Q.10 Back traversal is possible in_____ linked list (CO2)

Q.11 Binary search for an element in an array cannot be conducted if it is not_____. (CO5)

Q.12 Tree is a _____ data structure. (CO4)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Give any five differences between an Array and a Linked List (CO1)

Q.14 Describe various types of data in C language. (CO1)

Q.15 Explain primitive and non-primitive data structures. (CO1)

Q.16 Give algorithm for adding a node at the end of the linked list (CO2)

Q.17 Give three differences between sequential and binary searching. (CO5)

Q.18 Give algorithm for adding an element in a queue (CO2)

Q.19 Sort the following list of element using Heap Sort. (CO5)

18 12 21 19 11 15 17 13

Q.20 Define the following terms (CO1)

a) Stack b) Recursion

c) binary tree

Q.21 What are the operations that can be performed on a doubly linked list? Write a algorithm on addition of a element at the beginning of the doubly linked list? (CO2)

Q.22 Discuss the following terms associated with a tree (CO2)

1. Path
2. Level
3. Degree of a node
4. Terminal node
5. Root node

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 What are different types of Arrays? Explain how element of arrays are stored in memory (CO2)

Q.24 Write short notes on

a) Structured Programming

b) Top Down Approach

Q.25 Write algorithm for bubble sort? Explain with a suitable example.