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4th Sem.
Branch : Computer, Computer (For Speech and Hearing Impaired)
Sub. Data Structures using C

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple Choice Questions. All Questions are compulsory. (6x1=6)

Q.1 Which of the following is a non-linear data structure?

a) Array b) Stack

c) Queue d) Tree

Q.2 Linked list is considered as an example of _____ type of memory allocation.

a) Dynamic b) Static

c) Compile time d) Heap

Q.3 What is the other name for a postfix expression?

a) Normal Polish Notation

b) Reverse polish Notation

c) Warsaw notation

d) Infix notation

Q.4 Which of the following is an application of queen data structure?

a) When a resource is shared among multiple consumers.

b) When data is transferred asynchronously

c) Line at ticket counter

d) All of the above

Q.5 Which of the following data structures is used in recursion?

a) Stack b) Queue

c) Linked List d) Trees

Q.6 To obtain a prefix expression, which of the tree traversals is used?

a) Level order traversal b) Pre-order traversal

c) Post order traversal d) In order traversal

SECTION-B

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

Q.7 When DELETE operation is called on an empty queue, the condition is called_____.

Q.8 The identifier whose value change during execution of program is called_____.

Q.9 Expand the term FIFO_____.

Q.10 For a linear array A(81, 82, 83, 84_____138). Find the total number of elements in the array.

Q.11 Define (i) Siblings (ii) Degree of a tree

Q.12 What is the precondition for performing binary search operation on a given list of elements.

SECTION-C

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

Q.13 What is the limitation of a linear queue. How is it removed.

Q.14 List various data types used in C.

Q.15 Define the terms (i) Binary tree (ii) Data structure (iii) Pointer (iv) global variables.

Q.16 Give algorithm for inorder traversal of a binary tree.

Q.17 Explain linear and non-linear data structures.

Q.18 Give algorithm for deleting an element form the circular queue.

Q.19 What is an algorithm? Give some characteristics of a good algorithm.

Q.20 Draw a tree for the following expression. Give the post order and preorder traversal expression.
A + B / C * D * E * F - G

Q.21 Give differences between variable and constant.

Q.22 Sort the following list of elements using BUBBLE sort. Show result after each step.

6 10 12 19 16 15 7 3

SECTION-D

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

Q.23 Define Array. Give the different types of Arrays? Explain how element of two dimensional arrays are stored in memory?

Q.24 Write short note on any two

a) Bottom up approach

b) Stack

c) Queues

Q.25 Convert the following expressions into postfix notation using stack

A + B / C + D / E – F * G