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4th Sem/ Computer, Computer(For Speech and Hearing Impaired)

Subject : 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 traversing algorithm is not used to traverse in a tree? (CO4)

a) Post order b) Pre order
c) Post order d) Randomized

Q.2 When do you use a sparse array? (CO2)

a) When there are unique elements in the array
b) When the array has more occurrence of zero elements
c) When the data type of elements differ
d) When elements are sorted

Q.3 What is the precondition for searching a list using binary search (CO5)

a) The given list has to be sorted
b) The given list should be more than ten elements in the list
c) There is no such condition required
d) All of the above

Q.4 Variable that stores the address of another variable is called (CO3)

a) Pointer b) Array
c) Stack d) Function

Q.5 Which operations can be performed on a linked list. (CO2)

a) Creation of a linked list
b) Traversing a linked list
c) Insertion of a node in a linked list
d) All of the above

Q.6 PUSH operation in a already full stack may result in (CO3)

a) Overflow
b) Underflow
c) Element will be inserted
d) None of these

SECTION-B

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

Q.7 The identifier whose value does not change during execution of program is called _____ (CO1)

Q.8 When the function calls itself it is called _____ (CO3)

Q.9 Linked list is a _____ data structure (CO2)

Q.10 Deletion operation in a stack is called _____ (CO3)

Q.11 Give an example of sorting method which uses partitioning. (CO5)

Q.12 Each node of a binary tree can have at most _____ children. (CO4)

SECTION-C

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

Q.13 Explain the various types of data structures. (CO1)

Q.14 Give five differences between a Array and a linked list (CO2)

Q.15 Explain linear and non linear data structure. (CO1)

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

Q.17 Define Array. Give algorithm for traversing an array. (CO2)

Q.18 Give algorithm for deleting an element form the stack. (CO3)

Q.19 What is the limitation of a linear queue. How is it removed. (CO3)

Q.20 Give the differences between sequential search and binary search. (CO5)

Q.21 Sort the following list of elements using bubble sort. Show result after each step. (CO5)

16 15 12 19 18 50 17

Q.22 Define the following terms (CO4)

a. Binary tree

b. Balanced binary tree

c. Complete binary tree

SECTION-D

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

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

Q.24 Expalin binary search technique with suitable example? Give algorithm. (CO5)

Q.25 Convert the following expressions into postfix notation using stack (CO3)

A + B * C + D / E - F