Q.21 Sort the following list of element using Bubble Sort. (CO5)

Q.22 Write short notes on any one of these (Co1)

a) Structured Programming

b) Bottom up Approach

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? (CO2)

Q.24 Write algorithm for selection sort? Explain with a suitable example (CO5)

Q.25 Explain the three ways of traversing in a binary tree with algorithm of each? (CO4)

No. of Printed Pages : 4 223821

Roll No. .....

2nd Sem. / Artificial Intelligence & Machine Learning

Subject : Principles of Data Structures

Time : 3 Hrs. M.M. : 60

SECTION-A

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

Q.1 Which variables are accessed by all modules of the C program. (CO1)

a) Local Variables b) Global variables

c) Both a & b d) None of the above

Q.2 The nodes of the tree with zero children are called (CO4)

a) Non terminal nodes

b) Parent nodes

c) Siblings

d) Terminal nodes

Q.3 Which of the following is/are Non-linear data structures (CO1)

a) Stack b) Array

c) Linked List d) Trees

Q.4 Which of the following sorting algorithms fall in the category of Divide and Conquer technique (CO5)

a) Selection sort b) Quick sort

c) Bubble sort d) All of these

Q.5 Which of the following properties is followed by a Stack (CO3)

a) FIFO b) LIFO

c) LILO d) Any of these

Q.6 Which of the following operations can be performed on a Singly linked list (CO2)

a) Insertion b) Deletion

c) Traversal d) All of the above

SECTION-B

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

Q.7 Define Pointer (CO1)

Q.8 Define Data structure (CO1)

Q.9 Give node structure of a Doubly Linked List (CO2)

Q.10 Length of an array is calculated by the formula UB+LB +1 (True/False) (CO2)

Q.11 In stack elements can PUSH and POP through _____ only (CO3)

Q.12 Name the two methods for searching for presence of element in the given list. (CO5)

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 (Co2)

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 (Co3)

a. Adding an element in a Linear Queue

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

Q.20 The inorder and postorder traversal of a tree are as follows. Create the tree and traverse it in preorder form (Co4)

Inorder D G B A H E I C F

Postorder G D B H I E F C A