B. Tech. / Second Semester (Artificial Intelligence and Data Science)/
B. Tech._21-22_SOE_ADS-203 Examination

Course Code : AIDS 2158

Course Name : Data Structures

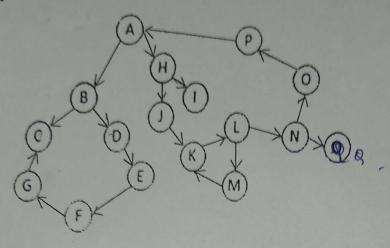Time : 3 Hours]

[Max. Marks : 40

Instructions to Candidates :—
   (1)   Do not write anything on question paper except your exam seat number.

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   (2)   Write the answers along with accurate question number in answer book.
   (3)   All questions are compulsory.
   (4)   All questions carry marks as indicated.

1.   Construct Max and Min Heap on following sequence

   76, 25, 19, 12, 6, 21, 86, 56, 47, 31, 10, 73, 20

   6(CO1)

2.   (A)   Write a function for addition of two polynomials using Singly Linked List assuming linked lists for polynomials already exist.   4(CO2)

   (B)   Write a program to print doubly linked list in reverse order.   3(CO2)

3.   Write a program for creating and searching an element in Skip list.   7(CO3)

4.   Make a BST for the following sequence of numbers 45, 36, 76, 23, 89, 115, 98, 39, 41, 56, 69, 47 and find Inorder, Preorder and Postorder traversals.   6(CO4)

5.   Construct 2-dimensional tree from (53, 14), (65, 51), (70, 3), (27, 28), (30, 11), (99, 90), (31, 85), (7, 39), (15, 61), (32, 29), (40, 26), (29, 16), (40, 24) and delete (30, 11), and (65, 51).   7(CO4)

6. (A) Apply Breadth First Search on the graph given below and list down any 4 sequences.

4(CO4)

(B) Draw at least 3 distinct minimum Spanning tree for following graph.

3(CO4)