Total No. of Questions :8] *[Total No. of Printed Pages :2*

Roll No.....

MCSE/MSE-102

M.E./M.Tech. I Semester

Examination, June 2017

Advanced Data Structure and Algorithm

Time : Three Hours

 Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Explain the features of algorithm. Also discuss the bestcase, worst case, average case of an algorithm. 7
   b) Describe the role of ADT in algorithm design what is meant by algebric specification of ADT. 7

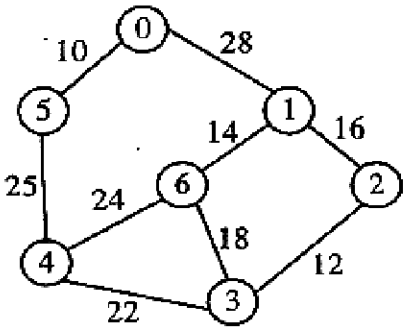
2. a) Consider the linear array AAA(5:80) BBB(–5:10) and CCC(18) 7
      i) Find the number of elements in each array
      ii) Suppose base (AAA) = 300 and w = 4 words per memory cell for AAA. Find the address of AAA[15], AAA[35] and AAA[55].
   b) Write a procedure which removes the first elements of a list and adds it to the end at the list without changing any valves in INFP(Only START and LINK may be changed) 7

3. a) Write a procedure HEAD(CAMPO, LINK, START, AVAIC) which forms a header circular list from an ordinary one-way-list. 7
   b) Explain PUSH and POP operation of stack. 7

4. a) Convert the Infix expression to Postfix expression
   $A+(B*C-(D/E\uparrow F)*G)*H$ 7
   b) The following six numbers are inserted in order into an empty binary search 40, 60, 80, 33, 55, 11 7

5. a) Create a heap from the following list of numbers 44, 30, 80, 22, 60, 55, 77, 55. 7
   b) Explain AVL tree with the help of example. 7

6. a) Write comparison between BFS and DFS. 7
   b) Explain Prim's algorithm to generated minimum cost spanning tree. Also generate minimum cost spanning tree for the given graph using this algorithm. 7



7. a) Discuss about management issues. 7
   b) Explain storage compaction. 7

8. Write short note on 14
   a) Dynamic programming
   b) Greedy Algorithm
   c) Radix sort
   d) Merge sort

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