COMPUTER SERVICES CENTRE
MAJOR – MAL 701

Date : 22.11.2008. ***Duration : 2 hour***
Time : 15:30 hrs. ***Max. Marks : 40***

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1. Write a function ***reduce*** which accepts an infix expression as a string, removes all the extra parentheses and prints the final infix expression using a stack of characters. Define all the related functions also.

(5)

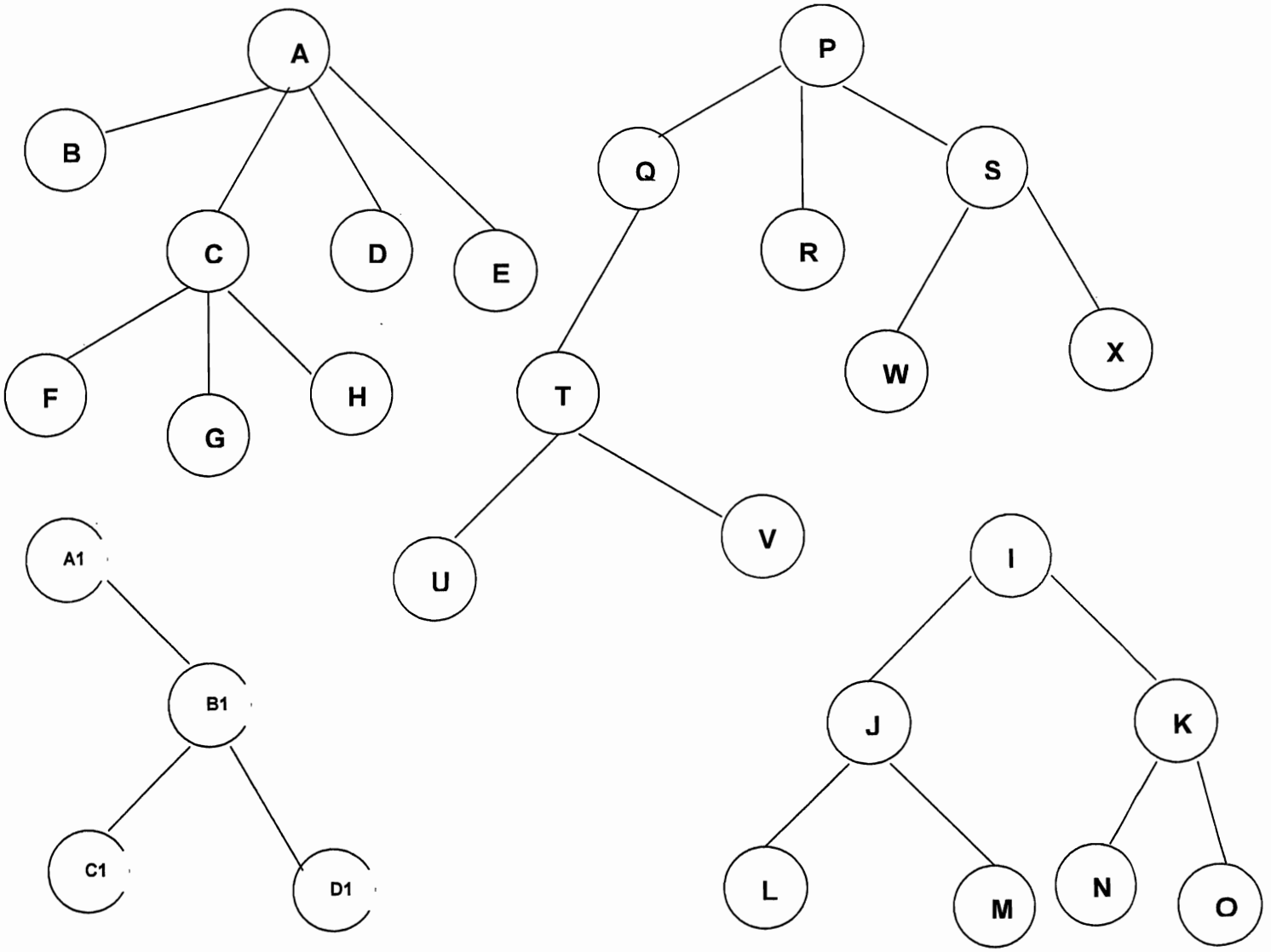
2. The following results for ***in-order*** traversal and ***pre-order*** traversal of a binary tree are given:

   in-order: 32, 28, 15, 4, 26, 10, 56, 17, 92, 25, 62, 72, 60, 77, 84, 35, 75, 42, 45, 47
   pre-order: 62, 56, 28, 32, 15, 26, 4, 10, 25, 17, 92, 72, 84, 60, 77, 75, 35, 45, 42, 47

   Construct a binary tree using the above data (no programme).

(8)

3. Consider the following forest:



(a) Represent this forest as a binary tree with the assumption that the oldest son becomes the left son and a brother becomes the right son of the node.
(b) Write a programme for post-traversal of this binary tree using link lists.

(5+8)

4. (a) Write the passes/ steps for sorting the following data using radix sort:
24, 65, 745, 879, 876, 22, 569, 4, 9, 247, 57, 542, 65, 543, 73, 99, 51, 111, 50, 600, 8, 44
(b) Write a complete programme for the radix sort.

(6+8)