AC-3095
Second Year B. Sc. (Computer Science) (Sem. IV)
Examination
April/May – 2015
Paper - III : Data Structure

Time : 2 Hours] [Total Marks : 50

Instruction :

1. Answer in short : 14
   1) List out non-primitive data structure.
   2) Define Binary tree.
   3) What is Forest and leaf node ?
   4) List disadvantages of Array.
   5) Convert (A+B)*(C-D/E)*G+H into postfix.
   6) Define priority queue.
   7) List out application of stack.

2. 1) Explain the concept of stack. Write a program to reverse a string. 6+6
    2) Write algorithms to perform PUSH, POP, PEEP operation on stack.

OR

2. 1) Explain the difference between stack and queue. Discuss their functional difference.
    2) List out the various applications of stack. Write an algorithm to convert an infix expression into prefix expression.
3 1) What do you mean by queue? List different types of queue. Write an algorithm to perform insertion and delete operations on circular queue.

2) Compare circular queue with simple queue. Write an algorithm to perform insertion and deletion operation of circular queue.

OR

3 1) Define Dequeue. Write program to perform input and output operations on input restricted dequeue.

2) Explain Quick sort with example.

4 1) Describe the concept of circular singly link list. Write an algorithm to perform insertion and deletion from particular position in circular singly link list.

2) Explain the concept of link-list. How to create link-list and display its all nodes? Explain using appropriate examples and figures.

OR

4 1) Write a detailed note on 2-3 tree and Height weight balanced tree.

2) List the types of graph and explain them briefly.