TKN/KS/16–5971

Third Semester Bachelor of Computer Application Examination

DATA STRUCTURES

Paper – III

Time : Three Hours]   [Max. Marks : 50

N. B. : All questions are compulsory and carry equal marks.

1. (a) What is Linked List ? What are the types of linked list ?   5

   (b) How polynomial expression can be represented using linked list ?   5

OR

   (c) Write an algorithm to insert a node at the beginning of linked list.   5

   (d) Write an algorithm to search an element in a linked list.   5

2. (a) Write an algorithm to push an element into a stack.   5

   (b) What is recursion ? Explain in brief.   5

OR

   (c) Write an algorithm to evaluate postfix expression.   5

   (d) Explain Tower of Hanoi problem for 3 disks.   5

3. (a) Write an algorithm to insert an element in a circular queue.   5

   (b) Write a short note on :—

   (i) Dequeue

   (ii) Priority Queue   5

OR

   (c) Explain Hashing technique in brief.   5

   (d) Write an algorithm to sort an array using insertion sort.   5
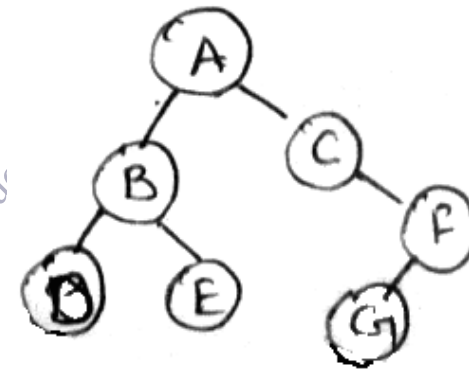
4. (a) Write an algorithm for preorder traversing of binary tree.   5

   (b) Explain Breadth first search algorithm for graph.   5

OR

   (c) Write a short note on representation of graph using linked list and matrix.   5

   (d) Write an algorithm to search an element in binary search tree.   5

5. (a) Give a diagrammatic representation of circular header linked list. $2\frac{1}{2}$

(b) Explain POP operation of stack. $2\frac{1}{2}$

(c) What do you mean by complexity of algorithm ? $2\frac{1}{2}$

(d) Write in order traversing of tree.

$2\frac{1}{2}$