

FACULTY OF INFORMATICS

M.C.A. I-Year II – Semester (Supplementary) Examination, January 2015

Subject : Data Structures

Time : 3 hours

Max. Marks : 80

Note: Answer ONE question from each unit. All questions carry equal marks.

UNIT – I

- 1 a) Write a C++ program for ordered linked list with insert, delete operations.
b) Discuss about doubly linked list with an example.

OR

- 2 a) Explain linked list operations.
b) Write a program to implement linear list.

UNIT – II

- 3 a) Explain about a sparse matrix and write a program to implement it.
b) Write a transpose matrix program.

OR

- 4 a) Define queue. What are the different applications of queue?
b) Write a program to implement stack operations.

UNIT – III

- 5 a) Define binary tree and write its properties.
b) Write a binary search program.

OR

- 6 a) Explain B-tree insertion, search operations with an example.
b) What is AVL tree? Explain searching in AVL tree.

UNIT – IV

- 7 a) Write a quick sort program.
b) Explain hashing techniques.

OR

- 8 a) Explain heap sort in detail.
b) What is collision? Explain collision resolution techniques.

UNIT - V

- 9 a) Explain weighted graph representation.
b) Write BFS pseudocode and explain with an example.

OR

- 10 a) Write a ADT graph and what are different types of graphs.
b) Discuss about DFS.
