

Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

B.Sc.(IT) (2013 & 2014) (Sem.-2)
DATA STRUCTURES THROUGH 'C'
Subject Code : BS-108
M.Code : 12510

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **SIX** questions carrying **TEN** marks each and a student has to attempt any **FOUR** questions.

SECTION-A

1) Answer briefly :

- a) How to analyze Worst Case for Sequential Search Algorithm?
- b) What are Two-Dimensional Arrays? Give Example.
- c) Discuss Array of Pointer to Strings with example.
- d) What is a Linked List?
- e) How to represent Stack as an Array?
- f) What is a Sparse Matrix?
- g) Define Circular Queue.
- h) What are the applications of Binary Trees?
- i) What is the Best, Average and Worst Time complexity of Linear Search?
- j) Define Dequeue.

SECTION-B

- 2) Explain the Bubble Sort Algorithm. Sort the sequence 53, 25, 92, 16, 76, 30, 43, 54, 21 using Bubble sort Algorithm.
- 3) Discuss any five Matrix operations with valid examples.
- 4) a) Evaluate the following postfix expression using Stack :
$$2\ 3\ 1\ * + 9 -$$

b) What are priority queues? Discuss array implementation of Priority Queue.
- 5) a) How to multiply polynomials using linked list? Explain with example.
b) Write a program to find Transpose of a Sparse Matrix in C.
- 6) What are strings? Discuss the String Functions with valid examples.
- 7) What are possible ways to traverse Binary Trees? How to represent Binary Trees using Arrays?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.