M. SC. (Computer Science) SEM – I (Choice Based Credit & Grade System) : SUMMER - 2019

SUBJECT : ADVANCED DATA STRUCTURES

Day : Friday
Date : 12/04/2019

Time : 03.00 PM TO 06.00 PM
Max. Marks : 60

S-2019-1244

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.

Q.1 Define Queue as an ADT. Write a C code to implement circular queue. **[15]**

OR

What are various tree traversal methods? Elaborate with example. **[15]**

Q.2 A) Answer **ANY ONE** of the following: **[08]**

a) Write a C code to find transpose of a matrix.

b) What are ordered lists? Explain with example.

B) Answer **ANY ONE** of the following: **[07]**

a) Explain DFS method with example.

b) Discuss the data structures required for representing graph.

Q.3 Answer **ANY THREE** of the following: **[15]**

a) Describe different types of binary tree.

b) Define the structure of scatter table.

c) Convert to prefix and postfix:

i) $a+b*c-d$ **ii)** $p*q/r$

d) State the operations performed on stack.

e) Explain radix sort with example.

Q.4 Write short notes on **ANY THREE** of the following: **[15]**

a) Shortest path

b) Vectors

c) Multiple stacks

d) Dynamic array

e) Priority queues

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