

Day & Date	Semester	Subject Name	Time	Code	Marks
Tuesday 27/03/2018	IV (Fresh)	Data Structures and File Organization	11.00 AM To 01.30 PM	4101	75

Instructions: -

1. Question No.1 is Compulsory
2. Attempt any Four out of the remaining.

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|---|-----------|
| <b>Q1. Write a note on the following.</b>   | <b>15</b> |
| a. Array  | 3         |
| b. Binary tree  | 3         |
| c. Weighted graph.  | 3         |
| d. circular link list   | 3         |
| e. hashing  | 3         |
| <b>Q.2</b> a) Differentiate between stack and Queue with diagram and example.                                     | <b>8</b>  |
| b) Differentiate between Directed and Indirected graph.   | <b>7</b>  |
| <b>Q.3</b> a) What is binary search? Explain with algorithm.  | <b>8</b>  |
| b) What is queue? Write a program to delete and insert a node from queue.   | <b>7</b>  |
| <b>Q.4</b> What do you mean by file organization? Explain all primitive operations on file.                       | <b>15</b> |
| <b>Q.5</b> a) Sort the following list using quick sort.   | <b>8</b>  |
| 14,23,12,45,56,67,87,54,32,82,34,16,24,56   |           |
| b) Make expression tree for following – $((a+b)*(c+d)/e)+f-(g+h)$ . Write preorder and post order traversal also. | <b>7</b>  |
| <b>Q.6</b> a) Write an algorithm for insertion and deletion of node from doubly link list.                        | <b>8</b>  |
| b) Write a program to delete and insert a node from array.  | <b>7</b>  |
| <b>Q.7</b> a) Explain classification of data structure in detail .  | <b>8</b>  |
| b) Explain shortest path algorithm in detail.   | <b>7</b>  |
| <b>Q8.</b> a) Explain BFS algorithm with example.   | <b>8</b>  |
| b) What is expression? Convert this expression in infix and prefix expression<br>AB+CD-*                          | <b>7</b>  |