National Institute of Technology, Tiruchirappalli 620 015

Semester Examinations - April 2018
Master of Computer Applications

CA 710 Data Structures and Applications

Date: 2 -04-2018
Time: 3 Hours Max. Marks: 50

1. a) Write pseudo-codes for inserting a node into and deleting from a doubly linked list. (5)
   b) Write notes on collision resolution techniques w.r.t hashing. (5)
2. a) Trace BFS for the following graph with node s as root: (5)

   b) Write a pseudo-code for non-recursive in-order traversal. (5)
3. a) Illustrate with examples all the cases of insertion of a key into a Red-Black tree. (5)
   b) Define: B-tree. (5)
4. a) Trace Dijkstra's algorithm for finding single-source shortest paths for the following graph: (5)

4. b) Illustrate Topological Sort with an example. (5)
5. a) Trace selection sort for S = <15, 10, 14, 23, 22, 37, 48, 69, 55, -11, 0, 76, 81>. (5)
   b) Write an algorithm for non-recursive binary search. (5)

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