R18

Code No: 157EK

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, July/August - 2022
DATA STRUCTURES
(Common to CE, EEE, ME, ECE)

Time: 3 Hours   Max.Marks:75

Answer any five questions
All questions carry equal marks
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1. What is a stack? Explain various operations performed on stack with sample Pseudo code and examples. [15]

2.a) Write down the applications of stacks and queues.
   b) Give the algorithm to perform search operation of an element in a linked list and explain the same. [7+8]

3. What is a dictionary? Explain skip list representation for implementing dictionary.[15]

4.a) What is hashing? Explain various hash functions.
   b) Illustrate linear probing and quadratic probing techniques with example. [7+8]

5. What are binary search trees? Explain insertion, deletion and search operations on binary search trees. [15]

6. What are Red-Black trees? Explain with examples. [15]

7. What are graphs? Explain various graph traversal techniques. [15]

8. Explain Knuth-Morris-Pratt pattern matching algorithm. [15]

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