Code: 9A05302

R09

B.Tech II Year I Semester (R09) Supplementary Examinations November/December 2017

ADVANCED DATA STRUCTURES

(Common to ECC, CSS, IT & CSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 (a) Explain the difference between passing arguments “by reference” and “by value” to function.
(b) Write a C++ program to check whether a given number is prime or not.

2 (a) Explain the concept of Function Overloading in C++ with an example program.
(b) Describe virtual base class. Give an example.

3 (a) Explain time and space complexity related to algorithms and also state their importance.
(b) Define the terms Abstract Data Type and Data Structure. Give example for each.

4 Write a procedure to handle collision in hashing using open addressing/rehashing method.

5 (a) Discuss external sort algorithms.
(b) What is a priority queue? Explain and give its applications.

6 Write a C++ program to create and manage binary search tree with following functions:
(a) Insert a node.
(b) Delete a node.
(c) Update a node.

7 Explain the construction of red-black trees with suitable example. Also write the algorithm for it.

8 Explain Knuth-Morris-Pratt algorithm with example. Also write a C++ program to implement it.

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