

Code: 9A05302

B.Tech II Year I Semester (R09) Supplementary Examinations June 2016

ADVANCED DATA STRUCTURES

(Common to ECC, CSS, IT & CSE)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Write a C++ program to accept a 5 digit number and report whether it is divisible by 3, 5, 7, 9 or not.
(b) What is access specifier ? Briefly discuss the different access specifiers in C++.
- 2 (a) What is class hierarchy? Explain how inheritance helps in building class hierarchies.
(b) What is runtime polymorphism? Explain with suitable example.
- 3 (a) Write algorithms for ADT operations for inserting a node to the linked list.
(b) Write algorithm for deleting a node from the linked list.
- 4 (a) What is the purpose of hashing? Describe any one method used to handle collisions in hashing.
(b) Compare hashing with skip lists.
- 5 Explain the following with example:
(a) Multiway merge.
(b) Polyphase merge.
- 6 (a) Create binary search tree for the following data and show how to delete a node which has both left and right child. With same data: 50, 25, 75, 22, 40, 60, 80, 90, 15, 30.
(b) Define AVL tree and write algorithms for insert and delete operations.
- 7 Explain the construction of splay trees with suitable example. Also write the algorithm for it.
- 8 Explain the following pattern matching algorithms:
(a) Brute force algorithm.
(b) Knuth-Morris-Pratt algorithm.
