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Question Paper Code : 77111

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2015.

Third Semester

Electronics and Communication Engineering

EC 6301 — OBJECT ORIENTED PROGRAMMING AND DATA STRUCTURES

(Common to Biomedical Engineering and also common to Fourth Semester Medical
Electronics, Robotics and Automation Engineering)

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is a reference variable?
2. What is a friend function?
3. What is overriding?
4. Why there is need for operator overloading?
5. What is ADT?
6. Write short notes on queue.
7. What is a tree?
8. How a graph is represented?
9. What is meant by sorting?
10. What is time complexity?

PART B — (5 × 16 = 80 marks)

11. (a) Describe the major components of object oriented programming with illustrations. (16)

Or

- (b) What is the purpose of constructor and destructor? Explain with suitable example the different types of constructors in C++ (16)



12. (a) What is inheritance? Discuss in detail about the various types of inheritances in C++ with suitable examples. (16)

Or

- (b) What is virtual function? Explain with an example how late binding is achieved using virtual function. (16)

13. (a) Write a set of routines for implementing two stacks within a single array. (16)

Or

- (b) Write a set of routines for implementing queue using linked lists (16)

14. (a) Discuss the different methods traversing a binary tree with algorithm (16)

Or

- (b) Illustrate the Depth First Search algorithm with a graph and explain. (16)

15. (a) Discuss the quick sort algorithm and apply the same for the following numbers 90, 77, 60, 99, 55, 88, 66. (16)

Or

- (b) Explain in detail about linear search algorithm with an example. (16)

