Reg. No. : | | | | | | | | | | | | |

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)
