Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 27188

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 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)

(Regulations 2013)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   What is destructor?

2.   Define friend function.

3.   Differentiate private and protected members of a class.

4.   What is dynamic binding?

5.   Define ADT.

6.   What do you mean by queue ADT?

7.   What is binary tree?

8.   When a graph is said to be connected?

9.   How an array elements are sorted using merge sort?

10. With an example compute the number of comparision, required to search an
     element using binary search.

PART B — (5 × 16 = 80 marks)

11. (a) Narrate on parameterized constructor and copy constructor with an
          example for each of them.   (16)

                                    Or

     (b) (i)   What do you mean by function overloading and explain it with an
                example?   (8)

          (ii) Elaborate on binary operator overloading with an example.   (8)

12. (a) (i) Explain base and derived classes with examples. (8)

(ii) Write a program to illustrate how constructors are implemented when the classes are inherited? (8)

Or

(b) (i) Give an account on virtual functions with an example. (8)

(ii) Write a note on "this" pointer with an example. (8)

13. (a) (i) Write a note on singly linked lists. (8)

(ii) Explain List ADT. (8)

Or

(b) Explain the applications of stack in detail. (16)

14. (a) (i) How can you construct an expression tree? Describe your answer with an example. (8)

(ii) Discuss how sets are represented? (4)

(iii) Explain union find operations? (4)

Or

(b) Describe in detail about breadth-first search and depth-first search in a graph. (16)

15. (a) Explain quick sort in detail. (16)

Or

(b) (i) Describe binary search in detail. (8)

(ii) Explain linear search in detail. (8)

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