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

Question Paper Code : 97058

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Third Semester

Electronics and Communication Engineering

EC 6301 — OBJECT ORIENTED PROGRAMMING AND DATA STRUCTURES

(Common to Biomedical Engineering)

(Regulation 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write a C++ code to swap values of two variable using reference variables in function.

2. Write a C++ code to display "pen object instantiated" and "pen object destroyed" when class for pen constructor and destructor are called.

3. Write a C++ code to display as area of square or rectangle using function overriding.

4. Write a sample to code to show the usage of this pointer in C++.

5. Evaluate the value of expression ab + c * d – using stack.

6. Find the maximum number of nodes in complete binary tree if d is the depth.

7. Write short notes on connected components.

8. Give the Representation of network of cities (Chennai, Delhi, Kolcutta and Mumbai) as weighted graph.

9. How to perform union operation?

10. What is the time complexity of quick sort and binary search?

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PART B — (5 × 16 = 80 marks)

11. (a) Write a member function and friend function to subtract two complex numbers in C++.

Or

(b) Write a member function to perform matrix addition, simple addition and string concatenation by overloading + operator.

12. (a) Write a C++ code to construct classes of a person with name and age as public properties, account details as private properties and percentage of mark as protected property. Construct a class with sports details of person. Construct a class to rank person based on the equal weightage to academic and sports details. Use inheritance concept.

Or

(b) Explain Class Object to Base and Base to Class Object conversions using C++ with suitable example.

13. (a) Write a C++ code to sum up all odd numbers in a single link list.

Or

(b) Write a C++ code to perform addition of two polynomials using link list form of queue.

14. (a) Explain DFS and BFS with suitable example.

Or

(b) Write C++ code for the implementation of different types of tree traversals. State few tree applications.

15. (a) Write C++ code to implement quick sort with suitable example. Write C++ code to implement linear search with suitable example.

Or

(b) Write C++ code to implement merge sort with suitable example. Write C++ code to implement binary search with suitable example.

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