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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)

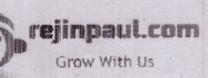
Time: Three hours

Maximum: 100 marks

Answer ALL questions.

PART A —  $(10 \times 2 = 20 \text{ marks})$ 

- 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)

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

- Write a member function to perform matrix addition, simple addition and (b) string concatenation by overloading + operator.
- Write a C++ code to construct classes of a person with name and age as 12. (a) 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.

- Explain Class Object to Base and Base to Class Object conversions using (b) C++ with suitable example.
- Write a C++ code to sum up all odd numbers in a single link list. 13. (a)

- Write a C++ code to perform addition of two polynomials using link list (b) form of queue.
- Explain DFS and BFS with suitable example. (a) 14.

- Write C++ code for the implementation of different types of tree (b) traversals. State few tree applications.
- Write C++ code to implement quick sort with suitable example. Write 15. (a) C++ code to implement linear search with suitable example.

Or

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

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