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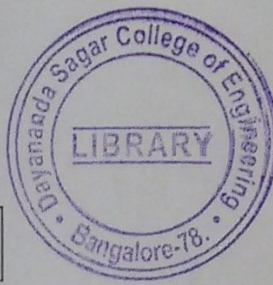**10TE661**

Sixth Semester B.E. Degree Examination, Dec.2015/Jan.2016
Programming in C++

Time: 3 hrs.

Max. Marks:100

Note: *Answer any FIVE full questions, selecting*
atleast TWO questions from each part.

PART – A

1   a. With an example explain new and delete operators and differentiate static and dynamic allocation. **(09 Marks)**
  b. Explain preprocessor directives. **(05 Marks)**
  c. Write a short note on built – in array data type. **(06 Marks)**

2   a. Explain the difference between the following sets of literal constants :
   i)   10, 10u, 10L, 10uL, 010, 0 × 10
   ii) 'a', L 'a', "a", L "a". **(05 Marks)**
  b. With examples, explain pointers and pointer arithmetic. **(08 Marks)**
  c. Write a C++ program to sort the contents of an array, in ascending order. **(07 Marks)**

3   a. Explain all the bit set operations with an example for each. **(08 Marks)**
  b. Write a C++ program to set n^{th} bit of an integer x, to clear n^{th} bit of an integer y and to complement n^{th} bit of an integer z using bit wise operators. **(05 Marks)**
  c. Write a C++ program to print the following pattern, using for loop. **(07 Marks)**

```
1   2   3   4   5
1   2   3   4
1   2   3
1   2
1
```

4   a. Write a C++ program to reverse all the digits of a number (integer) using function. **(06 Marks)**
  b. Explain function declaration, function calling and function definition with syntax and example. **(08 Marks)**
  c. Write a C++ program to find GCD of 2 numbers using recursive function. **(06 Marks)**

PART – B

5   a. What is exception handling, with an example explain try, throw and catch mechanisms in C++. **(10 Marks)**
  b. Write a C++ program to demonstrate multiple catch statements. **(10 Marks)**

6   a. With a C++ program explain the following : class, private, public, object, member function and friend function. **(10 Marks)**
  b. Write a C++ program to include a class with data members having an array and a variable top. The class has member functions push( ), pop( ), full( ), empty( ) and display( ), to implement stack operations. Write main program to use these functions depending on user's choice. **(10 Marks)**

7   a. What is operator overloading, explain with syntax and example. **(06 Marks)**
  b. Write a C++ program to overload binary+ operator to add two complex numbers. **(07 Marks)**
  c. Write a C++ program to overload pre and post increment operators. **(07 Marks)**

8   a. Explain different types of constructors with an example. **(10 Marks)**
  b. What is inheritance explain public, private and protected inheritance with an example. **(10 Marks)**

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