

Sixth Semester B.E. Degree Examination, Dec.09/Jan.10
Programming in C++

Time: 3 hrs.

Max. Marks:100

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

PART - A

- 1 a. What are preprocessor directives? Explain with examples. (06 Marks)
- b. Explain how dynamic memory allocation is performed with the help of new and delete operator. Will the memory allocated using new operator be deallocated automatically? If not, how should it be done? (07 Marks)
- c. What is an exception? Explain the primary components of the exception handling facility. (07 Marks)
- 2 a. Explain reference type and enumerated type variables and their significance. (07 Marks)
- b. Implement a member function to count the occurrence of a character in a string. Its declaration is as follows:

```
class String { Public : .....
                int count(char ch) const;
                ..... } ;
```

(07 Marks)
- c. Correct the errors, if any, in the following statements:
i) const int ic = i; ii) int ival = 1.01;
iii) int &rval2 = ival; iv) const int &ival2 = 1;
v) cin >> int input_value vi) double wage = salary = 999.99; (06 Marks)
- 3 a. Explain bitwise and bitset operators giving appropriate examples. (08 Marks)
- b. Write a C++ program to read an integer and to find whether it is prime or not. (06 Marks)
- c. Differentiate between break and continue statements with appropriate examples. (06 Marks)
- 4 a. Explain the different types of function parameter passing techniques. (08 Marks)
- b. Write a C++ program to find the largest element of an array, using a function. (06 Marks)
- c. Define recursion. Write a C++ recursion function to find the greatest common divisor of two integers. (06 Marks)

PART - B

- 5 a. Explain the format of a class definition, taking appropriate example. Also explain the importance of access specifiers. (08 Marks)
- b. Write a class stack to include top and array of integers and include member functions constructor pop, push, full, empty and display. Include exceptions, when popping from empty stack or pushing into a full stack. (12 Marks)
- 6 a. Explain constructor and destructor functions. (08 Marks)
- b. Write a C++ program to include a class time which has hours, minutes and seconds as data, a constructor without argument to initialize data to 0, a constructor with three arguments to be assigned to hours, minutes and seconds respectively, a constructor with one float argument and converts it to hours, minutes and seconds, display and destructor function. (12 Marks)
- 7 a. What is operating overloading? List the operators of C++ which can not be overloaded. (04 Marks)
- b. Explain the "this" pointer. (04 Marks)
- c. Write a class string include a string as the data and member functions, constructor, read write, + operator overloaded function to concatenate two strings. Include appropriate main function to exercise the above written class. (12 Marks)
- 8 a. Differentiate between private and public inheritance with appropriate examples. (10 Marks)
- b. Explain the concept of multiple inheritance with an appropriate example. (10 Marks)
