

**BACHELOR OF COMPUTER APPLICATIONS
(Revised)****Term-End Examination****June, 2013****BCS-031 : PROGRAMMING IN C++**

Time : 3 hours

Maximum Marks : 100

(Weightage 75%)

Note : Question number 1 is *compulsory* and carries 40 marks.
Attempt *any three* questions from the rest.

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1. (a) What is object - oriented programming paradigm ? Explain advantages of object - oriented programming paradigm over structured programming paradigm. 6
 - (b) Write a C++ program to create a class NUMBER with a constructor to initialize object of NUMBER class with three integer data values. Define a function *largest* to find the largest number among the three member data. 10
 - (c) What is need of memory management in C++ programming ? Explain in brief about memory management process in C++. 5
 - (d) What is a virtual function ? Write a program in C++ to create class Doctor with a virtual function *salary*. Derive class Visiting - Doctor and implement function *salary* in it. 8

- (e) What is operator overloading ? Briefly explain general rules of operator overloading. 6
- (f) What is stream manipulator ? Explain use of `setw()` and `setprecision()` as stream manipulator. 5
2. (a) Differentiate C++ programming language from C programming language in terms of parameter passing in functions. 5
- (b) What is data type ? Draw hierarchy of data types in C++. 5
- (c) Write a C++ program to implement simple calculator to perform '+, -, *, /' on two integer operands. Your program should have methods for reading data and for performing arithmetical operations. 10
3. (a) Write a C++ program to open an existing file and insert the text "My C++ File" at the end of it. 10
- (b) What is reusability of code ? Write a C++ program to create a class student, with basic data members such as name, address, age. Create a class PG_student by inheriting from student class. PG_student class should have a function to display, name, address, subject of the student. 10

4. (a) What is need of exception handling in C++ programming ? Explain with an example how exceptions are handled in C++. Briefly describe the hierarchy of exception classes in C++ standard library. **10**
- (b) What is template class ? Explain advantages of template class. Create a template class for Linked - List data structure. **10**
5. (a) What is function overloading ? How it is different from function overriding ? Explain with an example of each. **10**
- (b) How function calls are matched with overloaded functions in C++ ? Explain with the help of a C++ Program. **10**
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