**UG Even Semester (CBCS) Exam., May—2017**

COMPUTER SCIENCE

**( 4th Semester )**

Course No. : MCS–402 (C)

**( Object Oriented Programming with C++ )**

*Full Marks* : 75
*Pass Marks* : 30

*Time* : 3 hours

*The figures in the margin indicate full marks for the questions*

Answer **five** questions, selecting **one** from each Unit

UNIT—I

**1.** *(a)* What is object-oriented programming? Write the features of object-oriented programming. 2+6=8

*(b)* What is object? What kinds of things can become objects in OOP? 1+2=3

*(c)* How does object-oriented approach differ from object-based approach? 4





**2.** *(a)* What are the unique advantages of an object-oriented programming paradigm? 6

*(b)* Describe the OMT models. 9

UNIT—II

**3.** *(a)* What are inline functions? Write an inline function for finding minimum of two numbers. 6

*(b)* What is the significance of empty parenthesis in a function declaration? 2

*(c)* What is a data type? What are the data types supported by C++? 2+5=7

**4.** *(a)* What is an expression? What are the different types of expression? 1+6=7

*(b)* What is the difference between while and do-while statements? Explain with an example. 5

*(c)* What is a reference variable? What is its major use? 1+2=3

UNIT—III

**5.** *(a)* What is a constructor? How do we invoke constructor function? 4

(b) Write the special properties of constructor function. 6

(c) What are the differences between default and parameterized constructors? Give examples. 5

**6.** (a) What is a class? Write a program illustrating class declaration, definition and accessing class members. 2+6=8

(b) What are friend function and friend class? Write a normal function which adds objects of the complex number class. Declare this normal function as friend of the complex class. 2+5=7

UNIT—IV

**7.** (a) What is operator overloading? Write a program to overload unary increment operator for processing counters. 2+4=6

(b) Explain the syntax of binary operator overloading. How many arguments are required in the definition of an overloaded binary operator? 2+2=4

(c) What is type conversion? What are the different types of type conversion techniques? 2+3=5





**8.** (a) What is inheritance? Explain different types of inheritance. 1+10=11

(b) When do we make a virtual class? 2

(c) What is an abstract class? 2

UNIT—V

**9.** (a) Describe different methods of realizing polymorphism in C++. 7

(b) Why do we need virtual function? 2

(c) What are the rules of virtual functions? 6

**10.** (a) What is a file? Explain the various file stream classes needed for file manipulations. 2+5=7

(b) Discuss the methods of opening a file. Write a program to open a file named "XXX.bio" and write name, roll number and class into that file. 4+4=8

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