

Please check that this question paper contains 9 questions and 2 printed pages within first ten minutes.

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Uni. Roll No. ....

Program: B.Tech. (Batch 2018 onward)

Semester: 3<sup>rd</sup>

Name of Subject: Object Oriented Programming Using C++

Subject Code: PCIT-102

Paper ID: 16041

Scientific calculator is NotAllowed

**Time Allowed: 03 Hours**

**Max. Marks: 60**

**NOTE:**

- 1) Parts A and B are compulsory
- 2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
- 3) Any missing data may be assumed appropriately

**Part – A**

**[Marks: 02 each]**

**Q1.**

- a) Illustrate the role of short-circuit operators.
- b) What goes behind the scene when you attempt to get an output from a source code?
- c) What are the different modes in which C++ file is opened?
- d) Briefly state the role of constructors.
- e) If the body of a for loop is executed 'm' times, how many times is the counter updated and how many times is the condition checked?
- f) "Inheritance supports the concept of reusability". Comment on this statement.

**Part – B**

**[Marks: 04 each]**

- Q2.** Differentiate between call by value and call by reference.
- Q3.** Illustrate the concept of explicit and implicit type conversion with the help of programs.
- Q4.** Write a program to find sum of digits of a positive number entered by the user.
- Q5.** Compare structured programming paradigm with object-oriented paradigm.

- Q6.** Write a program which shows how to define a class, how to access member functions and how to create and access objects.
- Q7.** Differentiate between overloading and overriding with the help of example(s).

**Part – C****[Marks: 12 each]**

- Q8.** Create a class whose object represents a complex number (A complex number contains a real part and an imaginary part). Develop a program so that it is possible to add two objects of this class and store the result in third object (make use of constructors, destructors, friend functions, objects as parameters, return type of function as object).

**OR**

Create a class called Time that has separate int member data for hours, minutes and seconds. One constructor should initialize this data to 0. and another should initialize it to fixed values. A member function should display it, in 11:59:59 format. Write a program to add time of two objects by overloading '+' operator.

- Q9.** Explain the concept of exception handling with the help of program. Also describe how multiple exceptions can be handled.

**OR**

Explain the concept of class and function templates with the help of programs.

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