[No. of Printed Pages – 4]

ES203 Enrol. No. .....

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END SEMESTER EXAMINATION : NOV.–DEC., 2018

OBJECT ORIENTED PROGRAMMING USING C++

Time : 3 Hrs. *Maximum Marks : 70*

Note: ***Attempt questions from all sections as directed.***

SECTION – A (30 Marks)

Attempt any **five** *questions out of* **six.**
Each question carries **06** *marks.*

1. Distinguish between the following terms :–

   (a) Objects and classes

   (b) Inheritance and Polymorphism

   (c) Data Abstraction and Encapsulation

2. What is a friend function? What are the merits and demerit of using friend function? Explain with example.

P.T.O.

3. What are the steps involved in using a file in a C++ program?

4. Describe the syntax of multiple inheritance. When do we use multiple inheritance? Also explain Ambiguity Resolution Inheritance and how can we resolve it. Explain it with suitable example.

5. Explain the visibility of base class members for the access specifiers: private, protected and public while creating the derived class and also explain the syntax for creating derived class.

6. Differentiate between function overloading and function templates, can we overload a function template? Illustrate with an example.

SECTION – B (20 Marks)

Attempt any **two** *questions out of* **three.**
Each question carries **10** *marks.*

7. (a) Illustrate the reserved word inline with two examples. (5)

(b) Explain the constructors and destructors. Support your answer with examples. (5)

8. (a) Define pure virtual functions. Write a C++ program to illustrate pure virtual functions. (4)

(b) With an example, explain the syntax for passing arguments to base class constructors in multiple inheritance. (6)

9. (a) Write a program to calculate the area of circle, triangle, rectangle and square using function overloading. (5)

(b) What is meant by member access modifiers? Explain with example. (5)

SECTION – C (20 Marks)

(Compulsory)

10. (a) Explain operator overloading with the implementation of Complex numbers. (7)

(b) Discuss the importance of virtual base class with the help of an example. (6)

P.T.O.

ES203

(c) Write a C++ program to demonstrate hierarchical inheritance to get square and cube of a number. (7)