B. E. Third Semester (Computer Technology) / SoE – 2018 Examination

Course Code : CT 2202 **Course Name : Object Oriented Programming**

Time : 3 Hours] [Max. Marks : 60

Instructions to Candidates :—

(1) All questions are compulsory.
(2) All questions carry marks as indicated.
(3) Assume suitable data wherever necessary.

1. (A) Solve any **One** :—

(1) Write a program using class to perform all arithmetic operations on 2 integers. The name of the class should be **Number**, with separate member functions for each arithmetic operator. 7 (CO 2)

(2) Discuss various features of Object Oriented Programming. Using suitable example. 7 (CO 1)

(B) Solve any **One** :—

(1) What is Object Oriented Programming ? How it differs from procedural oriented programming ? 3 (CO 1)

(2) Suppose you are asked to handle the course registration system for 10 students. Implement this using class in C++. 3 (CO 2)

2. (A) Solve any **One** :—

(1) Consider a scenario of handling complex number class. Implement the concept of passing and returning objects as function argument using this class. 7 (CO 2)

(2) Demonstrate operator overloading by overloading the binary operator * to multiply two matrices. 7 (CO 2)

(B) Solve any **One** :—

(1) Discuss the concept of friend function in detail. 3 (CO 1)

(2) "Constructor is a special member function" Comment. Also Enlist the various characteristics of constructor. 3 (CO 1)

3. (A) Solve any **One** :—

(1) What are the necessary conditions to classify a class as an abstract class ? Demonstrate the concept by implementing an abstract class. 7 (CO 2)

(2) Discuss the situation where use of virtual base class is required. Give a suitable example. 7 (CO 2)

(B) Solve any **One** :—

(1) Give necessity of using interface in Object Oriented Programming. 3 (CO 1)

(2) Illustrate the class hierarchy of collection interface. 3 (CO 1)

4. (A) Solve any **One** :—

(1) How streams are working on multiple files to read the data ? Demonstrate it using the C++ program. 7 (CO 3)

(2) Write a program to create a class template having read( ), write( ) function read to store elements into array, write to display the contents of array. Implement these arrangement of integer, character, float data structure from main( ) program. 7 (CO 3)

(B) Solve any **One** :—

(1) Illustrate C++ stream class hierarchy in detail. 3 (CO 3)

(2) Discuss how STL is different from C++ Standard Library. 3 (CO 3)

5. (A) Solve any **One** :—

(1) What is MVC ? Illustrate your answer with the help of MVC architecture. 7 (CO 5)

(2) Elaborate in detail Exception Handling Mechanism with diagram and example. 7 (CO 4)

(B) Solve any **One** :—

(1) Enlist advantages of using Exception Handling Mechanism in a program. 3 (CO 4)

(2) Discuss java web component in detail. 3 (CO 5)

6. (A) Solve any **One** :—

(1) Discuss the various AWT event listener interfaces along with their use. 7 (CO 5)

(2) Illustrate event handling mechanism along with the steps involved in it. 7 (CO 5)

(B) Solve any **One** :—

(1) What is event ? Discuss various types of events in java. 3 (CO 5)

(2) Discuss the Delegation Event Model. 3 (CO 5)