

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| | | | | | | | |
|--|--|--|--|--|--|--|--|



***B.Tech. Degree III Semester Supplementary Examination
November 2020***

**CS/IT 15-1304 OBJECT ORIENTED PROGRAMMING
(2015 Scheme)**

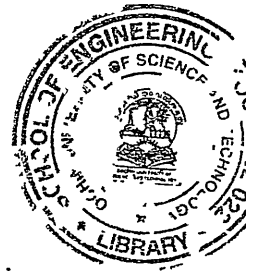
Time: 3 Hours

Maximum Marks: 60

**PART A
(Answer *ALL* questions)**

(10 × 2 = 20)

- I. (a) What is meant by operator overloading. Give an example.
- (b) Describe an inline function with an example.
- (c) Distinguish between objects and class.
- (d) What is a copy constructor?
- (e) What is an operator function? Describe its syntax.
- (f) When do we use protected visibility specifier to a class member?
- (g) What is a virtual base class?
- (h) What are pure virtual functions? What is the significance of it in declaring a class as abstract?
- (i) Discuss the different ways to open a file in C++.
- (j) What is a class template? Describe the general format of a class template.



PART B

(4 × 10 = 40)

- II. (a) How encapsulation is implemented in C++. Write a program to find the greatest of 5 numbers to illustrate the same. (5)
 - (b) What are the advantages of using object oriented programming? (5)
- OR**
- III. (a) Write a program using function overloading to find volume of a cube, a sphere and a cone. (5)
 - (b) What are friend functions? How it differs from a friend class? Illustrate with an example. (5)
- IV. Let V_1 be a vector with values (x_1, y_1, z_1) and V_2 be another vector with values (x_2, y_2, z_2) . Overload binary operation '+' to implement vector addition. (10)
- OR**
- V. (a) What are constructors? Discuss various types of constructors. (5)
 - (b) Briefly explain class to basic conversion with a suitable example. (5)
- VI. (a) Briefly explain hierarchical and hybrid inheritance with an example. (7)
 - (b) What is 'this' pointer? What are the applications of 'this' pointer? (3)
- OR**
- VII. (a) Explain the two types of polymorphism with an example. (4)
 - (b) Create a base class shape with three double type data members and three member functions getdata(), display() and area(). Make area() as a pure virtual function. Derive three classes rectangle, circle and triangle and redefine the function area() accordingly. (6)

(P.T.O.)

BTS-III(S)-11.20-0674

- VIII. (a) Describe exception handling mechanism available in C++ with suitable example. (5)
- (b) Write a program to demonstrate exception types being caught with catch() exception handler. (5)
- OR**
- IX. (a) Explain the functions seekg(), seekp(), tellg(), tellp() used in file operations. (4)
- (b) What is a template function? Write a C++ program to find the minimum value of a given set of elements using function template (6)
