

II B. Tech I Semester Supplementary Examinations, July - 2022**OBJECT ORIENTED PROGRAMMING THROUGH C++**

(Computer Science & Engineering)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions each Question from each unit
All Questions carry **Equal** Marks

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- 1 a) Give the structure of a C++ Program and explain. [8M]  
b) List and describe key concepts of Object-Oriented Programming. [7M]
- Or
- 2 a) Write the differences between C and C++. [7M]  
b) Write a C++ program to create a class rectangle having data members length and breadth, member functions to (i) read dimensions (ii) to calculate and display area (iii) to calculate and display circumference. Create minimum two objects. [8M]
- 3 a) Write the general form of function. Explain the different types of argument passing techniques with example. [8M]  
b) What is the benefit of copy constructor? Explain the necessity of defining your own copy constructor? [7M]
- Or
- 4 Write a program to create a class STUDENT having data member roll no. Create classes TEST & SPORTS from class student having data member marks of two test & sports score respectively. All three classes contain functions. (i) to set values of data members(ii) to display values of data members. Create class RESULT from class test & sport having data member total and member function to calculate total, display all information of student. Create one object of class result & call proper functions. [15M]
- 5 a) What is polymorphism? What is the advantage of using it? Differentiate between compile time & runtime polymorphism with example. [7M]  
b) Write a C++ program to overload unary minus operator using friend function. [8M]
- Or
- 6 a) What is the need of virtual function? With an example, explain overriding of Member function of base in derived class? [8M]  
b) What do you mean by Abstract class? Explain with example. [7M]
- 7 a) What is inheritance? How to inherit a base class as protected? Explain it in Multiple base classes. [8M]  
b) What are static data members? Explain with an example what the use of static data members is. [7M]

Or

- 8 a) Describe the use of call by value and call by reference with suitable example. [7M]  
b) Write a C++ program to initialize base class members through a derived class constructor. [8M]
- 9 a) Explain throwing and catching mechanism. [7M]  
b) Define the 'this' pointer, with an example, indicate the steps involved in referring to members of the invoking object. [8M]
- Or
- 10 a) Explain generic classes in templates. [7M]  
b) Write a program to create a template function for bubble sort and demonstrate the sorting of integers. [8M]