H

TBC–202/TBI–203

B. C. A./B. SC. (IT)
(SECOND SEMESTER)
MID SEMESTER
EXAMINATION, 2021-22

OBJECT ORIENTED PROGRAMMING
USING C++

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any *one* of the sub-questions.

(ii) Each sub-question carries 10 marks.

1. (a) (i) Write a sample code to show the difference between C and C++. (CO1)

(ii) Define Inline function. Write a sample program to create Inline function in C++.

OR

(b) Write a C++ class named calculation; it contains the following member variables named num1, num2, sum_v, sub_v, div_v and mut_v. (CO1)

Also Write the following for above mentioned class.

(i) Constructor to initialize num1 and num2 with 10 and 20 respectively.

(ii) Write member functions sum( ), sub( ), div( ) and multiply( ) to perform addition, subtraction, division and multiplication of two numbers and store the answer in sum_v, sub_v, div_v and mut_v.

(iii) Write a member function "show( )" to display above mentioned contents.

2. (a) (i) State OOP's concepts by using suitable example. (CO1)

(ii) State an example for defining and using a member function outside the class.

OR

(b) Write a program to show the implementation of function overloading by creating a class called Shape. The class contains method named area for calculating area of a triangle, area of a rectangle and area of a square.   (CO1)

3. (a) (i) Explain the following :

>> & << in C++

by using suitable example.   (CO1)

(ii) State the difference between class and structure.

OR

(b) Write a program in C++ to show the implementation of call by value and call by reference. Also state the difference between them.   (CO1)

4. (a) Discuss why constructors are termed a special kind of methods in C++. State its importance in C++. Also state the role of destructor in C++ by using suitable example.   (CO2)

OR

(b) Write a program in C++ to show the implementation of copy constructor in C++. (CO2)

5. (a) Explain the term "friend function are creative functions that break the data hiding in an object-oriented programming." Also write a C++ code which proves the said statement. (CO2)

OR

(b) Design a class distance in C++. It accepts distance in feet and inches. Write a friend function in C++ which accepts distance and feet two times and display the result after adding them respectively : (CO2)

Sample Case :

[
Enter First Distance (in Feet and Inches)
2 2
Enter Second Distance (in Feet and Inches)
2 2
Result is :
Total distance is 4 Feet 4 Inches
]