

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST - 2 EXAMINATION- APRIL-2023

COURSE CODE (CREDITS): 18B11CI415(4)

MAX. MARKS: 25

COURSE NAME: Object Oriented Programming

COURSE INSTRUCTORS: Dr. Nafis U. Khan

MAX. TIME: 1 Hour 30 Minutes

Note: All questions are compulsory. Marks are indicated against each question in square brackets. Assume the data wherever necessary.

Q1.

- a) How private data of a class can be accessed from outside of the class?
- b) Briefly define the concept of friend class in C++ with a suitable concise example.

CO2 [2+3]

Q2.

- a) What is meant by inheritance and composition in object oriented programming?
- b) How multilevel inheritance is different from multipath inheritance?

CO2 [2+3]

Q3. Write a program to find the grades of a student using multiple inheritance according to the following rules:

- Grade A, if marks are > 80
- Grade B, if marks are > 70 and < 80
- Grade C, if marks are > 50 and < 70
- Grade F, if marks are < 40

CO2 [5]

Q4. Explain the concept of function overloading and operator overloading in C++? CO3 [5]

Q5. Create a class *Shape* which has two overloaded member functions: *Area* and *Perimeter*. Depending upon whether the dimensions are input as integers or floating-point numbers, calculate the area and perimeter of two different shapes. CO3 [5]