JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

B.Tech-IV Semester (BI)

COURSE CODE (CREDITS): 18B11CI415 (4) MAX. MARKS: 15

COURSE NAME: Object Oriented Programming

COURSE INSTRUCTORS: EPN MAX. TIME: 1 Hour

Note: *(a) All questions are compulsory.*

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	CO	Marks
Q1	What are the advantages are of object oriented programming approach over structured programming approach?	CO-1	2
Q2	Explain the concept of Encapsulation, Inheritance and Polymorphism with respect to object oriented programming.	CO-1	2
Q3	Differentiate between early binding and late binding in C++. Discuss how virtual functions contribute to late binding and how it differs from early binding in terms of execution.	CO-1	3
Q4	Define a base class Employee with protected members name and ID. Derive two classes, Manager and Staff, from Employee. Implement a virtual function displayDetails() in the base class and override it in both derived classes to display the details of a manager and a staff.	CO-2	3
Q5	Design a base class Vehicle with virtual functions accelerate() and brake(). Derive classes Car and Motorcycle from the Vehicle class. Override the accelerate() and brake() functions in each derived class to simulate the acceleration and braking behavior of cars and motorcycles. Write a program to create objects of cars and motorcycles, store them in an array of pointers to the base class, and call the accelerate() and brake() functions using polymorphism to simulate their behavior on the road.	CO-2	5