GALGOTIAS UNIVERSITY

ADMISSION NUMBER												

B. Tech First Year

All Branches

Mid Term Examination - May 2024

Duration : 90 Minutes
Max Marks : 50

Sem II - E2UC201C - OOPS

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	Explain the difference between encapsulation and abstraction.	K2	(2)
2)	Compare and contrast class variables and instance variables in Python.	K1	(3)
3)	What is the purpose of inheritance in object-oriented programming?	K2	(4)
4)	Define a class called Animal with a method called speak(). Create subclasses Dog, Cat, and Cow, each overriding the speak() method to produce different sounds.	K2	(6)
5)	What are access specifiers? What is their significance in OOPs?	K3	(6)
6)	Implement an abstract class Vehicle with an abstract method drive(). Derive classes Car and Motorcycle from Vehicle and implement the drive() method to print driving actions for each vehicle.	K3	(9)
7)	Explain method overriding in inheritance with an example.	K4	(8)
8)	You are developing a software system for a library. There are different types of books in the library, such as Fiction, Non-Fiction, and Reference. Each type of book has specific attributes and behaviors. How would you design a class hierarchy using inheritance to represent these different types of books?	K4	(12)

OR

	Define a base class Shape with a method calculate_area(). Implement derived classes Rectangle and Circle inheriting from Shape and override the calculate_area() method to calculate the area of a rectangle and a circle, respectively.	K4	(12)