INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)
Dundigal, Hyderabad - 500 043

B.TECH I SEMESTER CIE – II EXAMINATIONS, JANUARY – 2024
Regulation: BT23
OBJECT ORIENTED PROGRAMMING

Time: 2 Hours   (COMMON TO ALL BRANCHES)   Max Marks: 20

Answer any FOUR questions
All parts of the question must be answered in one place only

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1. (a) What is the concept of friend function? How it violates the data hiding principle? Justify with example. [BL: Understand| CO: 4|Marks: 2]

   (b) If class B inherits class A privately. And class B has a friend function. Will the friend function be able to access the private member of class A? [BL: Apply| CO: 4|Marks: 3]

2. (a) List the types of polymorphism. Differentiate between multiple inheritance and multilevel inheritance. [BL: Understand| CO: 5|Marks: 2]

   (b) Why do we need to use inheritance? How will you prove that the features of superclass are inherited in subclass? [BL: Understand| CO: 5|Marks: 3]

3. (a) Explain public, private and protected access specifiers and show their visibility when they are inherited as public, private and protected. [BL: Understand| CO: 5|Marks: 2]

   (b) Summarize about constructors in derived classes. If a constructor function is defined for derived and base class, then which constructor function gets executed first, explain with example.

   [BL: Apply| CO: 5|Marks: 3]

4. (a) Outline the concept of stream abstraction layers in programming. Provide a hierarchy or diagram that illustrates the relationship between different levels of stream classes.

   [BL: Understand| CO: 6|Marks: 2]

   (b) Compare and contrast batch processing and stream processing. When would you choose one over the other for data processing tasks? [BL: Understand| CO: 6|Marks: 3]

5. (a) Describe the significance of closing files after completing file I/O operations. What can happen if files are not properly closed? [BL: Understand| CO: 6|Marks: 2]

   (b) Is it possible to dynamically change the formatting of console output during program execution? How might you achieve this, and what use cases could benefit from such dynamic formatting?

   [BL: Apply| CO: 6|Marks: 3]

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