INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)
Dundigal-500043, Hyderabad

B.Tech V SEMESTER END EXAMINATIONS (REGULAR/ SUPPLEMENTARY) - FEBRUARY 2024
Regulation: UG20
OBJECT ORIENTED PROGRAMMING DEVELOPMENT AND LANGUAGES

Time: 3 Hours   (AE | ECE | EEE | ME | CE)   **Max Marks: 70**

Answer ALL questions in Module I and II
Answer ONE out of two questions in Modules III, IV and V
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

MODULE – I

1. (a) Give the syntax of various control statements used in Java programs and explain them.

    [BL: Understand| CO: 1|Marks: 7]

    (b) Discuss about precedence of operators and associativity. What are the various special characters available in Java? Explain their purpose with examples   [BL: Apply| CO: 1|Marks: 7]

MODULE – II

2. (a) Summarize about dynamic method dispatch. Demonstrate how to use dynamic method dispatch to implement run-time polymorphism in Java.   [BL: Understand| CO: 2|Marks: 7]

    (b) Declare an abstract class to represent a bank account with data members name, account number, address and abstract methods withdraw and deposit. Method display() is needed to show balance. Derive a subclass savings account and add the following details: return on investment and the method calcAmt() to show the amount in the account after 1 year. Create instance of savings account and show the use of with draw and deposit abstract methods

    [BL: Apply| CO: 2|Marks: 7]

MODULE – III

3. (a) Explore various levels of protection provided to the variables or methods within classes, subclasses, and packages in java.   [BL: Understand| CO: 3|Marks: 7]

    (b) Design an interface called Shape with methods draw() and getArea(). Further design two classes called Circle and Rectangle that implements Shape to compute area of respective shapes. Use appropriate getter and setter methods   [BL: Apply| CO: 3|Marks: 7]

4. (a) What is an exception? How is it different from an error? Illustrate briefly the usage of five keywords in exception handling.   [BL: Understand| CO: 4|Marks: 7]

    (b) Develop a program that includes a try block and a catch clause which processes the arithmetic exception generated by division-by-zero error.   [BL: Apply| CO: 4|Marks: 7]

MODULE – IV

5. (a) Illustrate how Input/Output (I/O) is handled in Java with suitable examples. Differentiate between byte streams and character streams.   [BL: Understand| CO: 5|Marks: 7]

(b) Analyze the need of thread synchronization. How is it achieved in Java programming? Explain with a suitable program. [BL: Apply| CO: 5|Marks: 7].

6. (a) How many ways are possible in Java to create multiple threaded programs? Discuss the differences between them [BL: Understand| CO: 5|Marks: 7]

(b) Write an applet to accept account number and balance in the form of parameter and print message "low balance" if balance is less than 500. [BL: Apply| CO: 5|Marks: 7]

MODULE – V

7. (a) Demonstrates the different types of event listeners supported by java. Interpret the need of adapter classes in event handling. [BL: Understand| CO: 6|Marks: 7]

(b) Why swing components are preferred over AWT components? Write a simple calculator applet that can handle basic math functions [BL: Apply| CO: 6|Marks: 7]

8. (a) Write the step wise procedure to create and run an applet. Distinguish between applet and application [BL: Understand| CO: 6|Marks: 7]

(b) List and explain different types of layout managers with suitable examples. Enumerate the life cycle of an applet. [BL: Apply| CO: 6|Marks: 7]

− ∘ ∘ ◯ ∘ ∘ −