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Roll No. .....

TMC–202

M. C. A. (SECOND SEMESTER)

MID SEMESTER

EXAMINATION, March, 2024

ADVANCED JAVA PROGRAMMING

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any ***one*** of the sub-questions.

(ii) Each sub-question carries 10 marks.

1. (a) Explain command line argument. Ask a user to enter the 10 digit number as a command line argument and calculate the sum of even digits of a number, define a separate method calculate sum (long num) which will return the sum of even digits of a number. (CO1)

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OR

(b) Explain inner class and types of inner class in Java. Is it possible to define a class inside a method ? Explain using suitable Java program. (CO1)

2. (a) Explain the polymorphism feature. Also explain method overloading using suitable Java program. (CO1)

OR

(b) Explain method overriding. Also explain dynamic method dispatch using suitable Java code. (CO2)

3. (a) Explain the use of a constructor. Differentiate between default and parameterized constructors using the Java program. Is it possible to define a constructor in an abstract class ? If yes, then explain the reason. (CO1)

OR

(b) Differentiate between abstract class and interface. Is it possible to implement multiple inheritance in Java ? Explain with suitable Java program. (CO2)

4. (a) Explain the Java standard library. Create a Java package named com.bank.accounts. Inside this package, define an abstract class account with private member variables for account number and balance. Implement getter and setter methods for these variables and declare an abstract method calculateInterest to calculate interest based on the account type. Write a Java program outside the package to demonstrate inheritance by creating subclasses SavingsAccount and Checking Account that extend the Account class. (CO2)

OR

(b) Differentiate between the mutability and immutability of string objects. Write Java program to reverse the string without using reverse() method of String Butter/ StringBuilder class. (CO1)

5. (a) Explain the use of inheritance. Also explain the types of inheritance. Demonstrate the use of 'super' keyword in inheritance using suitable Java program. (CO2)

OR

(b) Explain the use of static import using suitable Java program. Differentiate between explicit and implicit import. (CO2)