



## MCA I Semester Degree Examination, July - 2024

### Object Oriented Programming using JAVA

Time : 3 Hours

Maximum Marks : 70

**Note :** Answer **any five** of the following questions with question No. 1 (Q.1) **Compulsory**.

1. (A) Illustrate different types of iteration statements and Jump statements by implementing code. **7**  
(B) Describe the features of JAVA. **7**
2. (A) Implement a Java class with multiple Constructors, each accepting different sets of parameters. Illustrate the concept of Constructor overloading by creating objects using these Constructors. **7**  
(B) Discuss the difference between Passing arguments by value and passing arguments by reference in Java methods. Provide examples illustrating both scenarios. **7**
3. (A) Define a Multilevel hierarchy involving three classes in Java. Explain the structure of the hierarchy. **7**  
(B) How to call super class constructors and super class members using super keyword. Demonstrate with a program. **7**
4. (A) Design a Java Interface called 'Animal' with methods for 'eat()' and 'sound()'. Implement the Interface in classes representing different types of animals such as 'Dog', 'Cat' and 'Bird'. **7**  
(B) Define Package. How to create and import package in Java ? **7**
5. (A) Explain the following in detail with example : **7**  
(i) Exceptions types  
(ii) Uncaught exceptions  
(B) Create a Java program with nested 'try-catch' blocks to handle exceptions occurring in different levels of a method call hierarchy. **7**



6. (A) Write a Java program to implement recursive function for calculating the factorial of a given number. 7
- (B) Discuss the accessibility of super class members in a sub class. Write a Java program to illustrate how private, protected and default access modifiers affect member access in inherited class. 7
7. (A) Explain the purpose of Interface and how they define and contract for classes that implement them. 7
- (B) Develop a Java program that reads user input and performs various operations. Implement multiple 'try-catch' block to catch exceptions of the super class 'IOException'. 7
8. Write short notes on the following :
- (A) Java Class Libraries 5
- (B) Inner Classes 5
- (C) JVM 4

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