12451

MCA 1st Semester (Regular/Re-appear/Improvement) Examination – December, 2024

OBJECT ORIENTED PROGRAMMING WITH JAVA
(New Scheme)

Paper : MCA-2101

Time : Three Hours]　　　　　　[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all. Question No. **1** is *compulsory*. Attempt *four* more questions by selecting *one* question from each Section. All questions carry equal marks.

1. (a) What are Object-Oriented Languages, and how does Java fit into this paradigm ?

   (b) What is byte-code, and why is it essential in Java ?

   (c) What is inheritance in Java, and how is it achieved ?

   (d) Explain the concept of polymorphism in object-oriented programming.

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(e) How does Java handle input and output, both for bytes and characters ?

(f) What are applets in Java, and what is their life cycle ?

(g) What is the lifecycle of a servlet in Java, and how is it defined ?

(h) Explain the purpose of the javax.servlet package and servlet parameters.

SECTION – A

2. Discuss the concept of data types, variables, and operators in Java. Explain the operator precedence in Java with examples.

3. Provide an in-depth explanation of object-oriented programming in Java, including classes, objects, and constructors.

SECTION – B

4. What are extending classes ? Discuss the various aspects of extending classes in Java and their implications.

5. Explain the role of abstract classes and the final modifier in Java. Explore the concepts of packages and interfaces in Java.

SECTION – C

6. What is an applets ? Give its lifecycle. Describe the process of creating applets in Java, including their architecture and usage.

7. What is a file ? Discuss the fundamental concepts of reading and writing on files in Java.

SECTION – D

8. Explain the lifecycle of a servlet in detail, including the various stages a servlet goes through, from initialization to destruction. Discuss the importance of each phase and provide examples to illustrate how a servlet functions during its lifecycle.

9. Explain the anatomy of a JSP page and the processing flow of JSP applications. Discuss the steps involved in setting up a JSP environment, including the installation of necessary software.

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