Roll No. .....

(05/25)

14331

B.C.A. EXAMINATION

(For Batch 2021 & Onwards)

(Fourth Semester)

CORE JAVA

BCA-41

Time : Three Hours *Maximum Marks :* 80

Note : Q. No. **1** is compulsory. Attempt *four* more questions by selecting *one* question from each Unit. All questions carry equal marks.

1. Attempt following parts (2 marks each) :

   (i) Define OOP paradigm and Java capabilities in this light.

   (ii) Differentiate between inheritance and polymorphism in Java.

(iii) What do constructor and destructors do in Java ?

(iv) Explain the concept and implementation of polymorphism in Java.

(v) Explain the purpose of try-catch blocks in Java exception handling.

(vi) What is a nested try block in Java ? Provide an example.

(vii) Discuss the concept of packages in Java and their significance in organizing and managing code.

(viii) What are abstract methods ? How are they implemented in abstract classes ?

Unit I

2. Discuss the salient features of Java that make it a popular programming language. Also discuss how various object orientation concepts are realized in Java ?

3. Discuss the syntax and working of various decision-making and iteration making statements in Java. Also the suitability of each structure.

Unit II

4. Differentiate between following in Java :

   (a) Nested and inner classes explaining their differences and usage scenarios.

   (b) Method overloading and method overriding.

5. Describe following topics/concepts in Java :

   (a) String class and StringBuffer class and their capabilities.

   (b) Wrapper classes and uses.

Unit III

6. Explain the concept, types and uses of packages in Java. Discuss the package hierarchy and its role in managing large-scale projects.

7. Explain the various access modifiers in Java and their respective scopes. Discuss how access modifiers are used to control access to classes, methods, and variables in Java programs. Also discuss the concept of life-time of identifiers in Java.

Unit IV

8. Describe the structure and purpose of try-catch-finally blocks in Java exception handling. Also discuss the concept and uses of user-defined exceptions. Give illustrative Java code wherever needed.

9. Describe the concept of files and various file handling operations in Java with their implementation. Describe the system classes are used in performing file operations.