

Dr. Babasaheb Ambedkar Open University
Term End Examination January – 2026

Course	: BSCIT	Date	: 26/02/2026
Subject Code	: BSCIT-501	Time	: 03:00pm to 05:15pm
Subject Name	: Advanced Java	Duration	: 02.15 Hours
		Max. Marks	: 70

Section A

Answer the following (Attempt any three) (30)

1. What is JDBC? Explain the JDBC architecture and the various steps involved in connecting a Java application to a database.
2. Explain the Servlet Life Cycle in detail with a diagram. Describe the role of init(), service(), and destroy() methods.
3. What is JSP? Explain the different types of JSP tags (Directives, Scriptlets, Expressions, and Declarations) with examples.
4. Define Java Beans. Explain the properties of Java Beans and the advantages of using them in software development.
5. Describe the concept of Session Management in web applications. Explain how Cookies and HttpSession are used for tracking users.

Section B

Answer the following (Attempt any four) (20)

1. Differentiate between Statement, PreparedStatement, and CallableStatement interfaces in JDBC.
2. Explain the various types of JDBC Drivers (Type 1 to Type 4) and their pros and cons.
3. What is the use of the Deployment Descriptor (web.xml) file in a Java web application?
4. Explain the working of JSP Standard Tag Library (JSTL) and its benefits.
5. Discuss Batch Processing in JDBC. How does it improve the performance of database operations?
6. Describe the Model-View-Controller (MVC) architecture in the context of Java web development.

Section C

Part – A (Multiple Choice Questions) (10)

1. Which interface is used to execute parameterized queries in JDBC?
A. Statement B. PreparedStatement
C. ResultSet D. Connection
2. Which method is used to send a batch of commands to the database for execution?
A. executeBatch() B. sendBatch()
C. runBatch() D. addBatch()
3. In the Servlet life cycle, the init() method is called _____ time(s).
A. Zero B. One
C. Many D. Two
4. Which JSP tag is used to write Java code directly into the generated servlet?
A. Directive B. Expression
C. Scriptlet D. Declaration

- 5 Which interface provides the commit() and rollback() methods for transaction management?
A. Statement B. ResultSet
C. Connection D. RowSet
- 6 Which HTTP method is considered idempotent?
A. POST B. GET
C. Both A and B D. None
- 7 Which class is used to load a JDBC driver at runtime?
A. Driver Manager B. Class
C. Driver D. Connection
- 8 The default scope of a Java Bean is:
A. page B. request
C. session D. application
- 9 Which JSP implicit object is used to access the servlet configuration information?
A. request B. config
C. session D. response
- 10 JDBC stands for:
A. Java Data Binding B. Java Database Connectivity
C. Java Database Component D. Joint Database Connection

Part – B (Do as Directed)

(10)

State whether the following statements are true or false

- 1 The JDBC Type 4 driver is written entirely in Java.
- 2 Servlets are platform-dependent server-side components.
- 3 The getMessage() method of SQLException returns the vendor-specific error code.
- 4 JSP pages are eventually compiled into Java Servlets.
- 5 Cookies are stored on the server side to maintain session data.
- 6 A Java Bean must have a no-argument constructor.
- 7 The executeUpdate() method is used for SELECT statements in JDBC.
- 8 MVC stands for Module Variable Controller.
- 9 Batch processing reduces the number of network round trips to the database.
- 10 The destroy() method in a servlet is called before every request is processed.
