

IM.Sc (CS) Sem.6 Examination
Distributed Application Development
June-2025

Date : 24/6/2025, Tuesday
 Time : 3-00 Hours]

[Max. Marks : 70

Instruction :

- Write both the sections in the separate answer book.
- Both Sections having equal weightage.
- Draw diagrams wherever necessary.
- Make assumptions wherever necessary

SECTION - I

Q.1 (A) Answer the following multiple-choice questions by choosing the correct option:
[Each question carries 1 Mark]

[5 M]

- a. Which of the following statements is true about the JDBC-ODBC bridge?
 A) It allows Java applications to communicate directly with any database using only JDBC.
 B) It acts as a driver that connects JDBC calls to the ODBC driver.
 C) It is the most efficient JDBC driver for production use.
 D) It is the recommended driver in Java 8 and later.
- b. Which of the following JSP elements is used to write Java code within a JSP page?
 A) `<%@ %>` B) `<%! %>` C) `<%= %>` D) `<% %>`
- c. Which method is called only once during the life cycle of a servlet?
 A) `service()` B) `doGet()` C) `doPost()` D) `init()`
- d. Which technique uses a unique identifier stored on the client-side to maintain session state in Java web applications?
 A) URL Rewriting B) Hidden Form Fields C) Cookies D) HTTPS
- e. What is the key difference between JSP and Servlet?
 A) JSP is faster than Servlet. B) Servlet is used for presentation, JSP for logic.
 C) JSP is for presentation, Servlet is for processing logic. D) Servlet cannot use HTML directly.

Q.1 (B) Answer the following in detail [Each question carries 2 Marks]

[6 M]

- a. List out types of JDBC Drivers. Explain any one.

OR

- a. Explain various features of Servlets.
 b. What is the difference between `doGet()` and `doPost()` methods in a servlet?

OR

- b. Explain `web.xml` file in servlet.
 c. What are the advantages of MVC?

OR

- c. Explain usefulness of XML.

Q.2 (A) Answer the following in detail [Each question carries 4 Marks]

[12 M]

- a. Explain features of Java Foundation Classes.

OR

- a. Explain the difference between Scriptlet, expression, and declaration tags in JSP with examples.
 b. How does JSP differ from Servlets?

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OR

- b. Describe the life cycle of a JSP page.
- c. Explain uses of Servlet config and ServletContext object with example.

OR

- c. Explain servlet life cycle with example.

Q.3 (A) Answer the following questions in detail [Each question carries 6 Marks]

[12 M]

- a. Explain JSP life cycle with diagram.

OR

- a. What are JSP implicit objects? Explain any five with use cases.
- b. What is session? Write a Java servlet program demonstrating how session management can be achieved using HttpSession object, including the necessary HTML files.

OR

- b. Explain advantages and disadvantages of servlets.

SECTION - II

Q.4 (A) Answer the following multiple-choice questions by choosing the correct option: [Each question carries 1 Mark]

[5 M]

- a. Which of the following is NOT a JSP implicit object?

A) response B) request C) connection D) session

- b. What is the correct syntax to include another JSP page at runtime?

A) `<%@ include page="header.jsp" %>` B) `<jsp:include page="header.jsp" />`
C) `<jsp:insert page="header.jsp" />` D) `<jsp:add page="header.jsp" />`

- c. Which method is called only once during the lifecycle of a JSP page?

A) doGet() B) jspService() C) jspInit() D) jspDestroy()

- d. In JSP, which directive is used to import Java packages?

A) `<jsp:import>` B) `<%@ page import="..." %>`
C) `<%@ import="..." %>` D) `<jsp:directive import="..." %>`

- e. What is the file extension for a JSP file?

A) .java B) .html C) .jsp D) .servlet

Q.4 (B) Answer the following in detail [Each question carries 2 Marks]

[6 M]

- a. Explain the components of the JDBC API.

OR

- a. What is Web.xml? explain its usefulness.
- b. Explain deployment descriptor.

OR

- b. What is JSTL?
- c. List and explain any four JSP scripting elements.

Q.5 (A) Answer the following in detail [Each question carries 4 Marks]

[12 M]

- a. Explain why JSP is preferred over servlet.

OR

- a. What is Servlet Interface?
- b. Explain the uses of sessions and cookies.

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OR

- b. Explain how servlet application works in detail.
- c. Draw and explain JSP architecture.

Q.6 (A) Answer the following questions in detail. [Each question carries 6 Marks] [12 M]

a. What is cookie? Write a JSP program demonstrating how session management can be achieved using cookies, including the necessary HTML files.

OR

a. Write a Java servlet program for deleting a specific entry from the "student" table of 'info' database. The servlet should accept input student ID from an HTML form and delete the corresponding record from the database.

b. Write a Java program using JDBC to insert enrollment_number, name and age data into the 'student' table of the 'info' database using a prepared statement.

OR

b. Explain different types of drivers
