Code: 23IT3501

III B.Tech - I Semester - Regular Examinations - NOVEMBER 2025

ADVANCED JAVA
(INFORMATION TECHNOLOGY)

Duration: 3 hours   Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.
   2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.
   3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.
   4. All parts of Question paper must be answered in one place.

BL – Blooms Level   CO – Course Outcome

PART – A

		BL	CO
1.a)	Which JDBC driver type is platform-independent and why?	L2	CO2
1.b)	Explain ACID properties in the context of JDBC transactions.	L2	CO2
1.c)	Differentiate between monolithic and multi-tier architecture.	L2	CO1
1.d)	Mention disadvantages of Model-I architecture.	L2	CO1
1.e)	How is a servlet different from a CGI program? Explain.	L2	CO3
1.f)	Explain the use of getSession() method in session tracking?	L2	CO3
1.g)	What is JSP? Explain advantage of JSP over Servlets.	L2	CO3
1.h)	Identify which JSP tags or features are commonly used in CRUD operations.	L2	CO3

			BL	CO
1.i)	What is the Spring Framework? Identify its features.	L2	CO4
1.j)	Identify any two commonly used annotations in Spring configuration.	L2	CO4

PART – B

			BL	CO	Max. Marks
		UNIT-I			
2	a)	Explain the JDBC architecture with a neat diagram. How does it facilitate database connectivity in Java applications?	L2	CO2	5 M
	b)	What are the common methods in ResultSet interface? Explain how they are used in JDBC with an example.	L2	CO2	5 M
		OR			
3	a)	Explain the use of CallableStatement in JDBC. Construct a sample code to call a stored procedure.	L3	CO2	5 M
	b)	Interpret different types of transaction isolation levels in JDBC. How do they effect concurrency?	L3	CO2	5 M
		UNIT-II			
4	a)	Identify the difference between a web server and an application server. Give examples of each. Also explain different types of HTTP request methods.	L2	CO1	5 M

	b)	Describe the main components of a web application. How do servlets and JSPs interact?	L2	CO1	5 M

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5	a)	What are EE6 containers? Describe the types of containers provided by EE6 with examples.	L2	CO1	5 M
	b)	Describe the Model-2 (MVC) architecture with a neat diagram. How does it improve over Model-I?	L2	CO1	5 M

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UNIT-III

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6	a)	Describe the performance benefits of using servlets over other server-side technologies.	L2	CO3	5 M
	b)	Illustrate the use of Cookie class in session tracking with proper code snippet and also explain methods of Cookie class.	L3	CO3	5 M

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7	a)	Explain the directory structure of a servlet-based web application and the role of the web.xml file.	L2	CO3	5 M
	b)	How is the HttpServletResponse interface used to send responses? Explain setting headers and redirecting responses.	L2	CO3	5 M

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UNIT-IV

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8	a)	Explain the different phases in the JSP life cycle. Describe the role of methods like jspInit(), _jspService(), and jspDestroy().	L2	CO3	5 M

	b)	Describe the three types of scripting elements in JSP with examples.	L2	CO3	5 M
		OR			
9	a)	Illustrate difference between static include (<%@ include %>) and dynamic include (<jsp: include>) with code snippets.	L3	CO3	5 M
	b)	Prepare a sample JSP page using <c: forEach> and <c: if> tags from JSTL and explain their purpose.	L3	CO3	5 M
		UNIT-V			
10	a)	Draw and explain the architecture of the Spring Framework. Briefly describe the role of any four major modules.	L2	CO4	5 M
	b)	Illustrate the difference between constructor-based and setter-based dependency injection in Spring with examples.	L3	CO4	5 M
		OR			
11	a)	How does setter injection work in Spring? Prepare a code example using XML configuration.	L2	CO4	5 M
	b)	Describe the Spring MVC life cycle with a neat diagram. Explain the role of DispatcherServlet.	L2	CO4	5 M