PARUL UNIVERSITY
FACULTY OF IT & COMPUTER SCIENCE
MCA/M.Sc.(IT), Summer 2024-25 Examination

Semester: 2
Subject Code: 05201251/05202156
Subject Name: Advanced Java Programming

Date: 12-05-2025
Time: 02:00 pm to 04:30 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Make suitable assumptions whenever necessary.
3. Write the answers for both sections on separate answer sheets.

SECTION - A [30 Marks]		[20]	CO	BT
Q1	**Answer the following questions:**			
(a)	Answer all questions	(5)		
i.	Which JDBC component is used to execute SQL queries? (A).ResultSet (B).Connection (C).Statement (D).Driver	1	CO1	BT1
ii.	Which of the following is a standard HTTP status code for successful operations in JAX-RS? (A).500 (B).200 (C).404 (D).401	1	CO4	BT1
iii.	What is the use of the @Column annotation?	1	CO4	BT1
iv.	Which JDBC interface is used to call stored procedures?	1	CO1	BT1
v.	What does REST stand for?	1	CO4	BT1
(b)	Attempt Any **Five** Questions out of Seven	(15)		
i.	What is the role of a transaction in Hibernate?	3	CO4	BT2
ii.	Define SQLException in the context of JDBC.	3	CO1	BT2
iii.	How do you use multiple @QueryParam annotations in a single JAX-RS method?	3	CO4	BT2
iv.	Define the @ResponseBody annotation in Spring MVC.	3	CO4	BT2
v.	What are the main components of JDBC architecture?	3	CO1	BT2
vi.	Create a JAX-RS client code that consumes a JSON response from a RESTful service.	3	CO4	BT3
vii.	Explain how to use annotations for Hibernate mapping instead of XML	3	CO4	BT3

			CO	BT
Q2	**Answer/Solve following in detail (Attempt any 2 out of 3)**	**[10]**		
(a)	Create a simple JDBC example that calls a stored procedure using CallableStatement.	5	CO1	BT4
(b)	Evaluate the role of web services in enabling communication between different applications. What are the benefits?	5	CO4	BT5
(c)	Compare Java-based configuration with XML-based configuration in Spring applications. What are the pros and cons of each approach?	5	CO4	BT4

SECTION - B [30 Marks]

		[20]	**CO**	**BT**
Q1	**Answer the following questions:**	**(5)**		
(a)	Answer all questions			
i.	Which interface must be implemented to create a servlet filter? (A).HttpServlet (B).Filter (C).ServletRequest (D).ServletResponse	1	CO2	BT1
ii.	Which of the following is a primary reason for using JSP in web applications? (A).JSPs are faster than HTML (B).JSPs separate presentation from business logic (C).JSPs are part of the JavaScript framework (D).JSPs cannot be compiled	1	CO3	BT1
iii.	Why is Apache Tomcat used in Java web development?	1	CO2	BT2
iv.	What type of methods are required to access JavaBean properties?	1	CO3	BT1
v.	What is the first method called in the servlet life cycle?	1	CO2	BT1
		(15)		
(b)	Attempt Any **Five** Questions out of Seven			
i.	Explain how EL can be used to access JavaBeans properties in JSP.	3	CO3	BT2
ii.	How do servlets handle client-side state management using cookies?	3	CO2	BT2
iii.	Explain the naming conventions for properties in JavaBeans.	3	CO3	BT2
iv.	List the main features of Apache Tomcat	3	CO2	BT2
v.	Describe the life cycle stages of a JSP page.	3	CO3	BT2
vi.	Demonstrate how to set response headers in a servlet.	3	CO2	BT3
vii	Demonstrate the use of the c:import tag to include content from another JSP page in the current page.	3	CO3	BT3
Q2	**Answer/Solve following in detail (Attempt any 2 out of 3)**	**[10]**		
(a)	Compare the use of multiple custom filters in a single web application. How does the order of execution affect the result?	5	CO2	BT4
(b)	Evaluate how storing global data in the application object affects the performance of a JSP web application.	5	CO3	BT5

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(c)	Analyze the steps involved in creating a custom filter in a servlet-based application.	5	CO2	BT4