

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
Supplementary Examination- 2026
B. Tech-V Semester (IT)

COURSE CODE (CREDITS): 18B11CI511 (3)

MAX. MARKS: 75

COURSE NAME: Advanced Java

MAX. TIME: 2 Hours

Note: (a) All questions are compulsory. (b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q No	Question	CO	Marks
Q1	<p>(a) Create a Java Swing GUI application named 'Currency Converter' that allows users to input a USD amount, select a target currency from a dropdown menu, and click a 'Convert' button to display the converted amount in a result label, handling non-numeric input gracefully.</p> <p>(b) Explain any four layout managers in Java GUI designing.</p>	1	$6+8 = 14$
Q2	<p>(a) Create a Java Servlet or JSP that maintains a visit counter for the page.</p> <p>(b) What is the role of the web.xml file in a Servlet application?</p> <p>(c) Explain the difference between doGet() and doPost() methods.</p> <p>(d) How are Session handled in Servlets?</p>	3	$4 \times 4 = 16$
Q3	<p>(a) What are the basic steps to create a JDBC application?</p> <p>(b) Differentiate between the following terms.</p> <ul style="list-style-type: none"> • Statement and PreparedStatement • executeQuery() and executeUpdate() • ResultSet and ResultSetMetaData 	2	$5+(3 \times 3) = 14$
Q4	<p>(a) Create a Java RMI application that consists of a Remote Interface, a Server, and a Client. The server must provide a remote method addNumbers(int a, int b) that returns the sum. The client should look up this service in the RMI Registry, pass two integers, and print the result returned by the server.</p> <p>(b) Differentiate between the following terms related to RMI.</p> <ul style="list-style-type: none"> • Stubs and skeletons? • Marshalling and Unmarshalling 	4	$5+(2 \times 3) = 11$
Q5	<p>(a) Develop a Java program consisting of a Server and a Client. The Server should listen on port 5000. When the Client connects and sends a text message, the Server should receive it, convert it to UPPERCASE, and send it back to the Client. The connection should close after one exchange.</p> <p>(b) Differentiate between Socket and ServerSocket classes.</p>	5	$6+4 = 10$
Q6	<p>(a) Write a simple Java EE program that defines a Stateless Session Bean to perform basic arithmetic operations (addition and subtraction). Then, create a client Servlet that calls the bean methods and displays the results in the browser.</p> <p>(b) Differentiate between Stateful and Stateless Session Bean.</p>	6	$7+3 = 10$