

2111040103030003
EXAMINATION MARCH-APRIL 2024
MASTER OF COMPUTER APPLICATIONS
(THIRD SEMESTER)
ADVANCED JAVA TECHNOLOGIES LEVEL 3

[Time: As Per Schedule]

[Max. Marks: 70]

Instructions:

1. Fill up strictly the following details on your answer book

- a. Name of the Examination : **MASTER OF COMPUTER APPLICATIONS (THIRD SEMESTER)**
 - b. Name of the Subject : **ADVANCED JAVA TECHNOLOGIES LEVEL 3**
 - c. Subject Code No : **2111040103030003**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.

Seat No:

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Student's Signature

Q.1 Attempt the following

- a. Explain the role of JDBC in Java applications. **3**
- b. Discuss the steps involved in establishing a database connection using JDBC. **4**
- c. Write a Java code snippet to retrieve data from a database table and display it in a console application. **7**

Q.2 Attempt the following

- a. Differentiate between Servlets and JSP. **3**
- b. Explain the Servlet life cycle and its methods in detail. **4**
- c. Create a simple JSP page that displays "Hello, World!" and explain the JSP lifecycle. **7**

Q.3 Attempt the following

- a. Define JavaBeans and Plain Old Java Objects (POJOs). How are they Different? **3**
- b. Create a JavaBean class with properties, getter and setter methods. **4**
- c. Explain the importance of using POJOs in modern Java development. **7**

OR

- c. What is deployment descriptor? What is its importance? Explain its various Sections. **7**

Q.4 Attempt the following

- a. What is Java Persistence API (JPA)? How does it differ from JDBC? **3**
- b. Describe the key components of JPA, including Entity, Entity Manager, and persistence Unit. **4**
- c. Write a JPA entity class for a "Product" table with appropriate annotations and explain their significance. **7**

OR

- c. What is AJAX? Explain its working and significance with example. **7**

Q.5 Attempt the following

- a. Explain the concept of EJB (Enterprise Java Beans). What are the different types of EJBs? **3**
- b. Discuss the role and features of Session Beans in EJB. **4**
- c. Create an Entity Bean for a "Customer" in an e-commerce application and define the relationship between Entity Beans. **7**

OR

- c. Discuss – HttpServletRequest & HttpServletResponse objects in detail. **7**
