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BT-5/D-25
ESSENTIAL OF INFORMATION TECHNOLOGY
Paper-PC-CS-305A

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *five* questions by selecting at least *one* question from each Unit.

UNIT-I

1. (a) Differentiate JDK, JRE and JVM. (5)
(b) What is the role of **labelled break** and **labelled continue** statements in Java? Explain with examples. (10)
2. (a) Explain the use of the **final** keyword in Java with suitable examples. How is it different when used with (a) variables, (b) methods, and (c) classes? (10)
(b) What is an interface in Java? Explain its significance with an example. (5)

UNIT-II

3. (a) Explain the features of Swing in Java. Describe any **five commonly used Swing components** with suitable examples. (7)
- (b) What is **event handling** in Swing? Write a program to demonstrate **ActionListener** for a button click. (7)
4. (a) What are **layout managers** in Java Swing? Explain **FlowLayout**, **BorderLayout**, and **GridLayout** with examples. (8)
- (b) Write a Swing program to design a simple calculator interface using layout managers. (7)

UNIT-III

5. (a) Explain how a servlet handles **HTTP GET** and **HTTP POST** requests. Write a short servlet code that reads parameters from an HTML form (e.g., name and email) and displays them. (10)
- (b) Explain the **lifecycle of a servlet** with the help of a neat diagram. (5)
6. (a) What are **cookies** in servlets? Explain how to create, add, and retrieve cookies in a servlet program. (7)

- (b) Explain **session tracking techniques** in servlets. Write a servlet program that uses **HttpSession** to maintain a user's login information across multiple pages. (8)

UNIT-IV

7. What is JDBC? Write its simple steps to connect a Java program to a database. Write a Java program to **connect to a database** and display all records from a table Student. (15)
8. What are **List** and **Map** in Java? Give one example of each. (7)
9. Write a Java program to :
- (a) Store 5 student names in a **List**.
 - (b) Store their marks in a **Map**.
 - (c) Display the names and marks. (8)
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