

(Time: $2\frac{1}{2}$ hours)

Total Marks: 75

- N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculators is **allowed**.

1. Attempt any two of the following:

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- Explain the use of adapter class with suitable example.
- Explain Delegation Event model. What are two steps in using the java delegation event model?
- Explain the various Layout Managers available in AWT.
- Write AWT based Java program that will read a string from user and display the length of the string.

2. Attempt any two of the following:

10

- Write a Java program using swing components that displays table containing student information (Name, Address, 10th %, 12th %, Emailed, Contact No.).
- What is use of JColorChooser? Write down the constructors and methods of the same.
- Distinguish Between AWT & JFC (Swing).
- Explain Root Pane, Glass Pane, Layered Pane, Content Pane and Desktop Pane.

3. Attempt any two of the following:

10

- What are servlets? What are the advantages of servlet over CGI?
- What is Request Dispatcher? What are its two methods?
- Explain the ServletRequest interface of servlet API.
- Write a servlet program to display the factorial of a given number.

4. Attempt any two of the following:

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- List and explain the Directive tags of JSP.
- Explain JDBC architecture.
- Write the purpose of the following JDBC classes:
i. DriverManager ii. ResultSet iii. Statement iv. Connection
v. PreparedStatement
- What are the advantages and disadvantages of Java Server pages?

5. Attempt any two of the following:

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- Explain Model-view-controller architecture.
- List various phases of JSF lifecycle. Explain in short.
- What is Facelet? Write the features of Facelet.
- Explain the benefits of EJB.

6. Attempt any two of the following:

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- Explain Architecture of Hibernate framework in detail.
- What is value stack in struts? State and explain the execution flow of value stack.
- Write a short on Interceptors in struts.
- Explain structure of hibernate.cfg.xml file.

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7. Attempt any three of the following:

- What is CheckBoxGroup? Explain with Example.
 - Write a java program to demonstrate the use of Tabbed Panes.
 - What is the purpose of WEB-INF file? Explain.
 - Write a JDBC program that inserts values in database. [table Name : Book, Fileds : Bookid, Title, Author, Publisher]
 - What are the different types of enterprise beans? Explain.
 - What is OGNL? Explain the execution flow of OGNL.
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