

(2½ 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 three of the following:

- Explain the architecture of Java Enterprise Application.
- Classify the EE Containers. Explain.
- Write a short note on javax.servlet package.
- Explain the life cycle of a servlet application.
- Explain the architecture of JDBC.
- Explain the architecture of Java Enterprise Application.

2. Attempt any three of the following:

- Explain the importance of RequestDispatcher Interface in javax.servlet. Add suitable example to explain the methods of the interface.
- Explain how java handles session management of a servlet application through HttpSession.
- What is cookie? Explain the need of the creation of the same. Explain the methods of cookie class that facilitative the creation, manipulation and deletion of the cookies.
- What is Non-Blocking I/O? Explain WriteListener and ReadListener performing in Non-Blocking I/O?
- Explain the working of Non-Blocking I/O.
- Explain about the file uploading feature of a servlet.

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3. Attempt any three of the following:

- What are directives in JSP? Explain page directive in detail. (With all its attributes)
- What is EL? Explain immediate EL, deferred EL, LValue and RValue in detail.
- Explain the advantages of JSTL over JSP.
- Explain JSTL core Tag Library.
- Explain the implicit objects of JSP.
- Explain the various scope of JSP application.

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4. Attempt any three of the following:

- Explain about enterprise bean container.
- What are the different types of beans? Explain.
- Explain the working behind message driven bean.
- Explain the concept of naming service. Add suitable illustration to it.
- Explain basic look up in JNDI. Also explain resource injection in JNDI.
- Explain the life cycle of an interceptor.

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5. Attempt any three of the following:

- Explain the persistent standards available in java.
- Draw and explain the architecture of hibernate framework.
- Explain JPA Architecture with the help of a neat diagram.
- What is Impedance Mismatch? How it can be solved?
- Explain different components of hibernate.
- Explain the modus operandi behind hibernate application.

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