

[Total Marks: 80]

(3 Hours)

- N.B.:** 1) Question No.1 is **compulsory**.
2) Attempt any **three** from the remaining **five** questions.

- Q. 1. Attempt **any four** :- **20**
- Explain Spring Framework with suitable diagram.
 - Generic classes in java.
 - String is Immutable in Java! Justify.
 - Use of super keyword in Java.
 - Explain JVM Architecture and differences between JDK, JRE & JVM.
- Q. 2. (a) What is exception handling? Explain the concept of checked and unchecked exception with an example of each. **(10)**
- (b) Difference between – **(10)**
- Input streams and output streams
 - GenericServlet and HttpServlet
- Q. 3. (a) Explain multithreading. What is thread life cycle? Write a program to create thread and set thread priorities to 1, 5 and 10. **(10)**
- (b) What is JDBC? Explain different types of JDBC drivers. Write a JDBC program to show the working with Resultset interface. **(10)**
- Q. 4. (a) What is serialization/deserialization of objects? Why do you need it? Give the example with necessary code. **(10)**
- (b) Explain JSP Architecture. Write a JSP program for the student field to store student information in database. **(10)**
- Q. 5. (a) What is session tracking? Explain HTTP session and demonstrate it using a Java servlet program. **(10)**
- (b) What do you mean by interface, what is its requirement in java explain with a suitable example? **(10)**
- Q. 6. (a) Explain in brief – **(10)**
- Custom tag in JSP
 - Lambda Expression
- (b) What is Delegation Event model? Explain any two event listeners in detail. **(10)**
