

### B3.3-R5 : WEB TECHNOLOGIES

**NOTE :**

1. Answer question 1 and any FOUR questions from 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

Total Time : 3 Hours

Total Marks : 100

1. (a) Differentiate between runtime and compile time polymorphism.  
(b) Explain the advantages of using object oriented programming.  
(c) List out the various operators available in Java. Explain ternary operator with suitable example.  
(d) What is inheritance ? Which inheritance type Java does not support? Why ?  
(e) Explain about ResultSet in brief in JDBC.  
(f) Briefly explain any four JSP implicit objects with example.  
(g) Explain life cycle of bean factory.  

**(7x4)**
2. (a) Explain the process of compiling and interpreting Java program.  
(b) What is an array ? How do you declare an array in Java ? What is default value of array for different data types ?  
(c) What is a Java package and how is it used ? Which package is imported by default ? Also, list down various advantages of packages.  

**(6+6+6)**
3. (a) List the available JDBC drivers. Also, explain any two JDBC drivers with its advantages and disadvantages.  
(b) Explain the life-cycle of a servlet with its diagram.  
(c) Differentiate between Servlet and JSP.  

**(7+7+4)**
4. (a) What is session ? How to create a session in Servlet ? How to delete a session in Servlet ? How to update an attribute in session in Servlet ?  
(b) Write a note on types of JSP scripting elements.  
(c) Explain page directives contentType and page Encoding attributes.  

**(6+7+5)**
5. (a) Explain the exception handling mechanism in JSP with suitable example.  
(b) Explain the architecture of hibernate in detail.  
(c) What are the steps to connect to the database using JDBC in Java ?  

**(6+6+6)**

6. (a) Briefly explain the various JDBC API components.  
(b) What is Object Relational Mapping (ORM) ? Explain the advantage of using Hibernate.  
(c) Explain the request dispatcher interface in detail with example. **(6+6+6)**
7. (a) What do you understand by dependency Injection ? Explain the difference between constructor and setter injection with suitable example.  
(b) What is bean wiring ? What is autowiring and name the different modes of it ? Also, explain the limitations of autowiring.  
(c) Briefly explain about hibernate query language. Also, explain HQL From, Select and Where clause with appropriate example. **(6+6+6)**

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