

**2022**  
**B.A./B.Sc.**  
**Fifth Semester**  
CORE – 11  
**COMPUTER SCIENCE**  
*Course Code: CSC 5.11*  
(Internet Technologies)

Total Mark: 70

Pass Mark: 28

Time: 3 hours

Answer five questions, taking one from each unit.

**UNIT-I**

1. (a) What is Java? Why is Java given the term “Write once, run anywhere”? 1+3=4  
(b) Briefly explain the following terms: 2×5=10
  - (i) Java Virtual Machine (JVM)
  - (ii) Java Development Kit (JDK)
  - (iii) Java Runtime Environment (JRE)
  - (iv) Bytecode
  - (v) Garbage Collector
2. (a) Explain the important features of Java. 9  
(b) What are arraylist in Java? Write a program to print an arraylist using for-each loop. 2+3=5

**UNIT-II**

3. (a) What is JavaScript (JS)? What are the advantages of JS? Explain internal JS and external JS with examples. 1+4+4=9  
(b) What are JavaScript functions? Write a JavaScript code to illustrate a function taking multiple parameters. 2+3=5
4. (a) What are the differences between Java and JavaScript? 5  
(b) What are event and event handling in JavaScript? Write a JavaScript code for click event and mouseover event. 3+6=9

### UNIT-III

5. (a) What is JDBC? Explain the JDBC architecture with a diagram. 1+5=6  
(b) List and explain the four types of drivers in JDBC. 8
6. (a) Explain the steps to connect Java application with database using JDBC. 8  
(b) What are the JDBC statements? 6

### UNIT-IV

7. (a) What are Java Server Pages (JSP)? What are the advantages of JSP over Servlet? 2+4=6  
(b) Write a note on JSP lifecycle. 8
8. (a) Explain the three most important elements of JSP. 10  
(b) What are implicit objects in JSP? Explain the out implicit object. 1+3=4

### UNIT-V

9. (a) What are JavaBeans? What are the features and advantages of JavaBeans? 2+7=9  
(b) Explain the two methods to access the JavaBean properties with an example. 5
10. Explain steps to develop a user-defined JavaBean. 14