(3 Hours) [Total Marks : 80]

N.B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **four** questions out of the remaining Q.2 to Q.7.

1. Attempt any **four**. 20
   (a) Describe abstract classes in JAVA.
   (b) Differentiate between Struts 1.x versus Struts 2.x
   (c) Explain features of JAVA language.
   (d) Explain JSP Implicit objects.
   (e) Differentiate between C++ and JAVA

2. (a) What is constructor? Explain the types of constructor. 8
   (b) What is XML? Explain structure of XML DTD. 7

3. (a) Explain thread life cycle with neat labeled diagram. Write a program to demonstrate the 8
   thread life cycle.
   (b) What is EJB? Explain the types of Bean. 7

4. (a) Explain Object Serialization and deserialization with suitable example. 8
   (b) Explain event delegation model. Explain any two event listeners. 7

5. (a) What is Servlet? Explain the servlet life cycle. 8
   (b) Describe the steps involved in a JAVA program in order to get connectivity to a database. 7
   Write a JAVA program to display all the value from the student database.

6. (a) What is package? Write a program to create **emp** package which includes Employee Class 8
   having following members: data fields such as EmpID, EmpName, DOJ, Designation,
   Basic_salary, Address and methods such as getData(), display(). And define a class Salary
   which extends **Employee** class of **emp** package and import emp package and calculate the
   salary of employee and display along with employee details.

   (b) What is exception? Explain Steps to create your own exception with a suitable example. 7

7. (a) What is Cookie? Write a simple servlet program to design to page visit counter using 8
   cookie.
   (b) What is Struts? Explain Struts architecture. 7

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