

QP Code : 19428

(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.
 (3) Answers to **sub question** should be answered **together**.

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| 1. Attempt any four . | 20 |
| (a) What is JDK and JRE ? | |
| (b) Draw the hierarchy of input stream classes. | |
| (c) Custom tags in JSP. | |
| (d) Adapter class. | |
| (e) Differentiate between Struts 1.X versus Struts 2.X | |
| 2. (a) What is database driver ? Which are the types of database drivers ? | 8 |
| (b) Explain the various levels of access protection available for packages & their implications. | 7 |
| 3. (a) What is Cookie class ? Which are the methods of Cookie class ? Explain with the help of example. | 8 |
| (b) Explain JSP architecture with neat diagram. | 7 |
| 4. (a) What is EJB ? Explain the types of EJB. | 8 |
| (b) What is Struts ? Explain Struts architecture. | 7 |
| 5. (a) List the Java API packages. Write a program to create "online education" package containing various related classes or interface as Branch, Subject, Text, Result etc. Each class or interface will contain methods to handle its task. | 8 |
| (b) Explain Event delegation model. | 7 |
| 6. (a) How do we achieve session tracking in servlet ? | 8 |
| (b) Define an exception called " No Match Exception" that is thrown when a string is not equal to "Mumbai". Write a program that uses this exception. | 7 |
| 7. (a) What is XML ? Explain structure of XML DTD. | 8 |
| (b) What is multithreading environment ? Explain thread synchronization in detail. | 7 |