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**B. TECH.**  
**(SEM V) THEORY EXAMINATION 2019-20**  
**WEB TECHNOLOGIES**

**Time: 3 Hours****Total Marks: 70****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief. 2 x 7 = 14**

- a. Define Path in JDK. How path is different from Class path?
- b. Define webpage with its type. Discuss responsive webpage with example.
- c. Define box model in CSS with block diagram.
- d. Describe garbage collection and demonstrate how it is functioning?
- e. Define DHTML with suitable example.
- f. Compare JDBC and ODBC. List the different types of JDBC drivers.
- g. Discuss about tomcat server. How to set the Classpath for servlet in tomcat server?

**SECTION B****2. Attempt any three of the following: 7 x 3 = 21**

- a. Compare object-oriented programming and object-based programming with example. List the features of object-oriented programming. Write a program in Java to demonstrate use of this keyword in constructor.
- b. Define thread. How to create a thread in java? Write a program that executes two threads. One thread will print the even numbers and another thread will print odd numbers from 1 to 5.
- c. Discuss XML. Which technologies is used to define the structure of XML document? Explain and demonstrate with an example.
- d. Discuss Socket and ServerSocket in java with its package. Write a program in java to demonstrate, how the communication is, establish between client and server?
- e. Discuss EJB. Explain EJB architecture. What are its various types?

**SECTION C****3. Attempt any one part of the following: 7 x 1 = 7**

- (a) Explain AWT and its controls. How the layout manager manage the AWT controls? Write a program to demonstrate graphics (i.e. line, circle, rectangle etc.) using Frame, Panel, and layout manager.
- (b) Explain Applet with its life cycle. Write a program to demonstrate simple java applet to display any image. Compare Applets over HTML.

**4. Attempt any one part of the following: 7 x 1 = 7**

- (a) Discuss DTD. How the DTD is different from XSD? Demonstrate to create a XML document of 10 students of third year. Add their roll numbers, marks obtained in 5 subjects, total marks and percentage and validate using DTD.
- (b) Explain CSS. What are the CSS frameworks? Explain in brief. What are the different ways of using the stylesheet? Write a CSS rule that makes all the text 2.5 times larger than the base font of the system.

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5. Attempt any *one* part of the following:

7 x 1 = 7

- (a) Discuss AJAX. Explain the application of AJAX with the help of suitable examples.
- (b) Compare Java and JavaScript. Explain and demonstrate 5 different types of objects in JavaScript with example.

6. Attempt any *one* part of the following:

7 x 1 = 7

- (a) Explain JDBC application architecture. List the various types of JDBC drivers. Discuss the steps to connect database with the web application using JDBC. Write a program to demonstrate how to retrieve the data from a table using JDBC API.
- (b) Explain JavaBeans. Why they are used? Discuss setter and getter method with java code.

7. Attempt any *one* part of the following:

7 x 1 = 7

- (a) Explain Servlets with its life cycle. How its life cycle is different from the life cycle of JSP? Explain with an example.
- (b) Discuss JSP in details. What are JSP directives? Explain various types of directives with suitable example.

RAJESH KUMAR TEWARI  
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