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BTECH
(SEM VI) THEORY EXAMINATION 2024-25
WEB TECHNOLOGY

TIME: 3 HRS

M.MARKS: 100

Note: Attempt all Sections. In case of any missing data; choose suitably.

SECTION A

1. Attempt all questions in brief.

02 x 10 = 20

Q no.	Question	CO	Level
a.	Define the web development strategy. Give two examples.	1	K1
b.	Explain the different between client-server and classical computing in the context of web development.	1	K2
c.	Explain the purpose of the Document Type Definition (DTD) in XML. How does it support data validation?	2	K2
d.	Differentiate between static and dynamic HTML. How does dynamic HTML enhance user interaction?	3	K2
e.	What is the role of ServerSocket and Socket classes in Java?	4	K1
f.	Define a client and a server in the context of networking.	4	K1
g.	How would you handle transactions in JDBC?	5	K3, K4
h.	Explain the concept of stored procedures and how they can be called from a Java application using JDBC.	5	K3, K4
i.	What is a Java Server Page (JSP) and how does it differ from a static HTML page?	6	K1
j.	What is the purpose of the pageContext object in JSP?	6	K1, K2

SECTION B

2. Attempt any three of the following:

10 x 3 = 30

Q no.	Question	CO	Level
a.	Discuss the importance of exception handling in Java. How does it aid in the development of powerful web-based Java applications?	2	K2
b.	Describe the structure and syntax rules for an XML document. What are the key components of a well-formed XML file?	2	K1
c.	Explain the distinction between TCP and UDP protocols in the context of socket programming. How does Java support both socket types?	4	K2
d.	Explain the concept of JavaBeans and describe its key features. How do JavaBeans contribute to building enterprise-level applications	5	K1, K2
e.	Explain the concept of session management in web applications. Discuss different techniques used for session tracking such as cookies, URL rewriting, and hidden form fields, along with their advantages and limitations.	5,6	K1, K2



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SECTION C

3. Attempt any one part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Explain how event handling works in Java. How does it work in the context of creating user-interactive web applications?	2	K2
b.	Define the Java methods and classes. What is their role in developing Java-based web applications?	2	K1

4. Attempt any one part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Create a Java program to parse XML data using the DOM and SAX parsers. Compare the performance and usage scenarios of the two parsing techniques.	2	K3
b.	Develop a simple XML document representing student records (name, roll number, course, and grade). Demonstrate how this XML can be parsed using Java.	2	K2

5. Attempt any one part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Explain the use of AJAX in client-server communication. How can AJAX improve the speed of online applications? Use an example to explain how an AJAX request-response cycle works.	4	K1
b.	What are the different types of sockets supported in Java? Provide a brief description of each.	3,4	K1

6. Attempt any one part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	What is Servlet technology? Explain the life cycle of a servlet and its role in server-side web application development.	5	K1, K2
b.	Describe how SQL JOIN operations, data manipulation commands, JDBC, prepared statements, and transaction processing are used together in a database application.	5	K1, K2

7. Attempt any one part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	What is the role of the HTTP request and response model in web applications? Describe the structure of an HTTP request and response and explain how they facilitate client-server communication.	5,6	K1, K2
b.	Define and explain the use of filters and listeners in web applications. How do they contribute to the management and control of web application behavior?	5,6	K1, K2