

Department of Information Technology, Jadavpur University  
Bachelor of Information Technology 3rd year, 2nd Semester Supplementary Examination – 2023  
Subject: **Web Technologies-II**

Time : Three hours

Full Marks: 100

*Different parts of the same question should be answered together.*

CO1 [20]	<p>[1] Answer either (a) or (b) in this block</p> <p>(a) <span style="float: right;">[4+8+8]</span></p> <p>i) What is the difference between HTML5 local storage and cookies?</p> <p>ii) Differentiate between Canvas and SVG? What are the advantages of SVG over other image format like JPEG or GIF?</p> <p>iii) What is HTML5 application cache? Discuss how it works.</p> <p>(b) <span style="float: right;">[4+8+8]</span></p> <p>i) Write, with examples, the differences between XQuery and Xpath</p> <p>ii) What is HTML5 Web Storage? Explain <i>localStorage</i> and <i>sessionStorage</i>. How can we add and remove data from local storage?</p> <p>iii) How an object is transferred to a web worker? Write relative advantages and disadvantages between <i>object transfer</i> and <i>object copy</i> to a web worker.</p>
CO2 [20]	<p>[2] Answer either (a) or (b) in this block</p> <p>(a) <span style="float: right;">[4+8+8]</span></p> <p>i) What is the difference between a <i>web server</i> and an <i>application server</i>?</p> <p>ii) What are the differences between <i>redirecting</i> and <i>forwarding</i> a request in the context of a web container? Explain with examples.</p> <p>iii) What is a web application and what is its directory structure? Briefly describe the contents of important directories.</p> <p>(b) <span style="float: right;">[4+8+8]</span></p> <p>i) What are, in a nutshell, the options for server-side programming?</p> <p>ii) What is a war file? How to create and extract a war file?</p> <p>iii) What do you mean by deploying a web application? What are different ways of deploying a web application? Explain any one of them.</p>
CO3 [20]	<p>[3] Answer either (a) or (b) in this block</p> <p>(a) <span style="float: right;">[4+8+8]</span></p> <p>i) What are the disadvantages of cookies?</p> <p>ii) Briefly describe the Servlet framework. What are the differences between <i>GenericServlet</i> and <i>HttpServlet</i>?</p> <p>iii) Briefly write the basic steps to develop and deploy a servlet.</p> <p>(b) <span style="float: right;">[4+8+8]</span></p> <p>i) How do you make a JSP page thread-safe?</p> <p>ii) Are Servlets Thread Safe? If not, how to achieve thread safety in Servlets</p> <p>iii) What are Servlet attributes and their scope? Demonstrate how to pass and retrieve parameters in Servlet.</p>

CO4 [20]	<p>[4] Answer either (a) or (b) in this block</p> <p>(a) [4+8+8]</p> <p>i) What's the full form of CGI? Write the principles of CGI programming.</p> <p>ii) Write the advantages of CGI programming over other server-side programming techniques.</p> <p>iii) How will you distinguish if a request is a CGI request or not? Describe the structure of a CGI program.</p> <p>(b) [4+8+8]</p> <p>i) What do you mean by the concept of SSI(Server Side Includes)?</p> <p>ii) What are the advantages of CGI over Servlet?</p> <p>iii) Develop a CGI script (using any language) that takes a string parameter(say name) and generates a message "Hello \$name" where \$name is the parameter passed.</p>
CO5 [20]	<p>[5] Answer either (a) or (b) in this block</p> <p>(a) [4+8+8]</p> <p>i) What are the basic differences between the JSP custom tags and java beans?</p> <p>ii) Show how to create and use a bean in JSP. What are the 3 tags used in JSP bean development?</p> <p>iii) Show how to create and use a custom tag in JSP.</p> <p>(b) [4+8+8]</p> <p>i) What are the primary JDBC API components? Write their functions briefly.</p> <p>ii) What is JDBC Transaction Management and how do you do it?</p> <p>iii) What are different types of ResultSet? Explain with examples</p>

CO1: **Explain** Web programming paradigms and advanced client-side web technologies (K2, A2)

CO2: **Explain, differentiate** and **recognize** different server-side web programming techniques (K2, A3)

CO3: **Sketch** server-side programs and **apply** Java based technologies to **solve** them (K3, A3)

CO4: **Apply** CGI based technologies to **develop** server-side programs (K3, A3)

CO5: **Describe** and **illustrate** service discovery in web frameworks (K2, A2)