Department of Information Technology, Jadavpur University
Bachelor of Information Technology 3rd year, 2nd Semester Examination – 2019
Subject: **Web Technologies-II**

Time: Three hours   **Full Marks: 100**

Different parts of the same question should be answered together.

CO1 [20]	**[1]** Answer either (a) or (b) in this block (a) [4+8+8] 　i) What is the difference between HTML5 web storage and indexDB? 　ii) Compare *Canvas* with *Scalable Vector Graphics (SVG)* in HTML 5. What are the advantages of SVG over other image formats like BMP or JPEG? 　iii) What benefits does *HTML5 application cache* bring? Discuss how it works. (b) [4+8+8] 　i) Write, with examples, the differences between Xpath and XQuery 　ii) What is HTML5 Web Storage? Explain *localstorage* and *sessionStorage*. How can we add and remove data from local storage? 　iii) How an object is transferred to a web worker? Write relative advantages and disadvantages between *object transfer* and *object copy* to a web worker.
CO2 [20]	**[2]** Answer either (a) or (b) in this block (a) [4+8+8] 　i) What is the difference between a *web server* and an *application server?* 　ii) What are the differences between *redirecting* and *forwarding* a request in the context of a web container? Explain with examples 　iii) What is a web application and what is its directory structure? Briefly describe the contents of important directories. (b) [4+8+8] 　i) What are, in a nutshell, the options for server-side programming? 　ii) What is a .war file? How to create and extract a .war file? 　iii) What do you mean by deploying a web application? What are different ways of deploying a web application? Explain any one of them.
CO3 [20]	**[3]** Answer either (a) or (b) in this block (a) [4+8+8] 　i) What are the disadvantages of cookies? 　ii) Briefly describe the Servlet framework. What are the differences between *GenericServlet* and *HttpServlet?* 　iii) Briefly write the basic steps to develop and deploy a servlet. (b) [4+8+8] 　i) How do you make a JSP page thread-safe? 　ii) Are Servlets Thread Safe? If not, how to achieve thread safety in Servlets 　iii) What are Servlet attributes and their scope? Demonstrate how to pass and retrieve parameters in Servlet.

CO4 [20]	[4] Answer either (a) or (b) in this block
	(a) [4+8+8]
	    i) What's the full form of CGI? Write the principles of CGI programming.
	    ii) Write the advantages of CGI programming over other server-side programming techniques.
	    iii) How will you distinguish if a request is a CGI request or not? Describe the structure of a CGI program.
	(b) [4+8+8]
	    i) What do you mean by the concept of SSI(Server Side Includes)?
	    ii) What's the full form of SSE? Write how an SSE-based application works.
	    iii) Write the life cycle of a servlet.

CO5 [20]	[5] Answer either (a) or (b) in this block
	(a) [4+8+8]
	    i) What are the basic differences between the JSP custom tags and java beans?
	    ii) Show how to create and use a bean in JSP. What are the 3 tags used in JSP bean development?
	    iii) Show how to create and use a custom tag in JSP.
	
	(b) [4+8+8]
	    i) What are the primary JDBC API components? Briefly write their functions.
	    ii) What is JDBC Transaction Management and how do you do it?
	    iii) What are different types of ResultSet? Explain with examples.

CO1: **Explain** Web programming paradigms and advanced client-side web technologies.

CO2: **Explain, differentiate** and **recognize** different server-side web programming techniques.

CO3: **Sketch** server-side programs and **apply** Java based technologies to **solve** them.

CO4: **Apply** CGI based technologies to **develop** server-side programs.

CO5: **Describe** and **illustrate** service discovery in web frameworks.