

Department of Information Technology, Jadavpur University
Bachelor of Information Technology 3rd year, 2nd Semester Examination – 2025
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 are, in a nutshell, the options for server-side programming? ii) Compare and contrast between poll and push method of data transfer. 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 is a .war file? How to create and extract a .war file? ii) Show how hidden fields can be used for session tracking. iii) What security issues should you be aware of while working with server-side code?
CO2 [20]	[2] Answer either (a) or (b) in this block (a) [4+8+8] i) What are the differences between <code>GenericServlet</code> and <code>HttpServlet</code>? ii) What do you mean by the concept of SSI(Server Side Includes)? iii) What are the differences between <i>redirecting</i> and <i>forwarding</i> a request in the context of a web container? Explain with examples. (b) [4+8+8] i) What are the disadvantages of cookies? ii) Describe, with examples, the idea of servlet-initialization parameters. iii) Develop and deploy a simple filter that forwards only those requests that come from the host having the IP address "172.16.4.248"
CO3 [20]	[3] Answer either (a) or (b) in this block (a) [4+8+8] i) What is SQL injection? Explain with examples. ii) In which case(s), we should use <i>PreparedStatement</i> instead of <i>Statement</i>? Explain with examples. iii) How will you retrieve database metadata and result set metadata. Use concrete examples. (b) [4+8+8] i) How to mitigate the SQL Injection risks? ii) What are different types of <i>ResultSet</i>? iii) How batch processing is done in JDBC?
CO4 [20]	[4] Answer either (a) or (b) in this block (a) [4+8+8] i) What are the advantages of CGI over Servlet? ii) What are the steps involved in configuring a server using CGI programming? 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) Write the potential risks of CGI programs. ii) Write the differences between the CGI script and Java? 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. Describe the procedure to deploy it.
CO5 [20]	[5] Answer either (a) or (b) in this block (a) [4+8+8] i) Briefly write the operational principle of XML-RPC. ii) Write with examples the format of XML-RPC request and response messages. i) Write relative merits and demerits of WebServer and ServletWebServer. (b) [4+8+8] i) In XML-RPC, which data types are specified? ii) Explain the idea of ‘introspection’ with respect to XML-RPC. iii) Write the pros. and cons. of Microservices Architecture.

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.
