

**WEB TECHNOLOGIES**  
**(CSEN 3133)**

**Time Allotted : 2½ hrs**

**Full Marks : 60**

*Figures out of the right margin indicate full marks.*

*Candidates are required to answer Group A and any 4 (four) from Group B to E, taking one from each group.*

*Candidates are required to give answer in their own words as far as practicable.*

**Group – A**

1. Answer any twelve:

**12 × 1 = 12**

*Choose the correct alternative for the following*

- (i) Which of the following is the correct way to add background color in HTML?  
(a) <body color = "green">  
(b) <body bg-color = "green">  
(c) <body style = "background-color=green">  
(d) <body style = "background-color:green;">.
- (ii) The service() method is the main method to perform the actual task of servlet. Who is calling this service() method?  
(a) init() method  
(b) The servlet container (i.e. web server)  
(c) requester (i.e. web browser)  
(d) None of these.
- (iii) Predict the output of the following JavaScript code.  
<script type="text/javascript"> a = 8 + "8";  
document.write(a);  
</script>  
(a) 16  
(b) Compilation error  
(c) Run time error  
(d) 88.
- (iv) In HTML, which attribute is used to create a link that opens in a new window tab?  
(a) src="\_blank"  
(b) alt="\_blank"  
(c) target="\_self"  
(d) target="\_blank".
- (v) Which of the following statement about XML is true?  
(a) XML tags are case sensitive  
(b) Tags should be properly nested  
(c) XML should have a root element  
(d) All of these.
- (vi) What will be the output of following CSS code snippet?  
h1{color: "green";} (b) Error occurs  
(a) Nothing happens  
(c) Heading becomes dark-green  
(d) Heading becomes green.

- (vii) What will be the possible output of the following JavaScript code?  
 let text = "Apple, Banana, Kiwi";  
 let part = text.slice(-12,-6)  
 (a) Banana, Kiwi (b) Banana  
 (c) Apple, Banana (d) Kiwi.
- (viii) Which of the following is used to declare attributes in an XML document?  
 (a) ATTRIBUTELIST (b) ATTRIBUTE  
 (c) ATTLIST (d) ALIST.
- (ix) Which of the following is not an implicit object in JSP?  
 (a) Request (b) Response  
 (c) Cookie (d) Seession.
- (x) Which of the following is not a lifecycle method of Servlet?  
 (a) init() (b) service()  
 (c) start() (d) destroy().

*Fill in the blanks with the correct word*

- (xi) GenericServlet class is encapsulated inside \_\_\_\_\_ package.
- (xii) \_\_\_\_\_ is used to obtain initialization parameters in a servlet
- (xiii) Code: var fruits=["Banana","Orange"," Apple"];  
 var energy = fruits.\_\_\_\_\_("","");  
**Output:** Banana,Orange,Apple.
- (xiv) Cookies are stored in \_\_\_\_\_.
- (xv) http is a \_\_\_\_\_ protocol.

### Group - B

2. (a) Differentiate between GET and POST Method. [[CO1](Remember/LOCQ)]  
 (b) Why is HTTP protocol called stateless protocol? How does it manage its state during item addition in the e-commerce shopping cart? [[CO1](Understand/LOCQ)]  
 (c) What do you mean by client side validation and server side validation? Briefly explain with example. [[CO1](Apply/IOCQ)]  
**3 + (2 + 2) + 5 = 12**
3. (a) Say you have a map of India which is only showing the boundary of each state. Write an HTML page to show that map and when user click within the boundary of West Bengal and Bihar it will be redirected to the detail map of corresponding state. You may assume arbitrary polygon or rectangular area in the said boundaries for this purpose. [[CO1](Apply/IOCQ)]  
 (b) Write an HTML document to create a job registration form.  
 (i) create test boxes for Name, Address, Phone, Email.  
 (ii) create two radio buttons for Gender specification.  
 (iii) create a textarea for additional information.  
 (iv) create username and password for future login.

- (v) create submit and reset buttons. [[CO1](learning/LOCQ)]
- (c) What are the differences between client side scripting and server side scripting? [[CO1](Remember/LOCQ)]
- 3 + 6 + 3 = 12**

### Group - C

4. (a) Write the differences between SAX and DOM parser. [[CO4](Remember/LOCQ)]
- (b) Create an XML document which has a root element emp. Root element contains more than one number of employee element. Each employee has sub-element empname, emp\_id, gender and address. Address has the subelement street, city, region, postalcode, countrycode. Street has two subelements street-name and street-number. Countrycode has an attribute c\_id. Write an external DTD to validate this XML. Generate a document which will print the names of the employee in sorted order using XSLT. [[CO4] (Design/HOCQ)]
- 3 + (2 + 3 + 4) = 12**
5. (a) Explain briefly with diagram the life cycle of a servlet. [[CO2](Remember/LOCQ)]
- (b) Using JavaScript validate a form containing username and e-mail id with the following validation rules
- (i) Both the fields are to be filled.
  - (ii) E-mail id should be in a proper format.
  - (iii) Username should not consist of numbers only. [[CO1] (Apply/IOCQ)]
- (c) Write a simple servlet program which will return the current date and time. [[CO2](Apply/IOCQ)]
- 4 + 5 + 3 = 12**

### Group - D

6. (a) What is JDBC driver? Write the names of four types of JDBC driver. [[CO2](Remember/LOCQ)]
- (b) Assume a table BOOKS [fields: BOOK-ID, TITLE, AUTHOR, PRICE, QTY] in mySql in your localhost. Now do the following from your Java file:-
- (i) Register the JDBC driver
  - (ii) Open a connection
  - (iii) Execute a query to find the title, author, price, qty from BOOKS where author is Tanenbum and price of the book is < \$15.00.
  - (iv) Display the result.
  - (v) Close the connection. [[CO2] (Apply/HOCQ)]
- (1 + 2) + (1 + 1 + 4 + 2 + 1) = 12**
7. (a) What is a directive in JSP? Name and very briefly explain the need of different JSP directives. [[CO2](Remember/LOCQ)]
- (b) How is a JSP different from that of a Servlet? [[CO2] (Remember/LOCQ)]
- (c) Write a simple JSP to count and display the number of times a page has been visited in a single session. [[CO3](Understand/IOCQ)]
- (2 + 3) + 3 + 4 = 12**

## Group - E

8. (a) Explain DNS spoofing with suitable example. [[C05](Remember/LOCQ)]  
 (b) How is a circuit gateway different from an application gateway? [[C06](Analyze/IOCQ)]  
 (c) Explain how NAT works with an example. [[C06](Understand/LOCQ)]  
**4 + 2 + 6 = 12**
9. (a) What is VPN? Why VPN is required? What are the advantages of using firewall? [[C06](Remember/LOCQ)]  
 (b) Compare eavesdropping and denial of service attacks. [[C05](Analyze/IOCQ)]  
 (c) Define Spoofing attack in the context network security. [[C05](Remember/LOCQ)]  
**(2 + 2 + 2) + (2 + 2) + 2 = 12**
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Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	54.17	27.08	18.75

### Course Outcome (CO):

After the completion of the course students will be able to

- CO1.** Understand the basic tags of HTML, CSS, java script and DHTML  
**CO2.** Connect a server-side program using servlet and JSP to a DBMS and perform insert, update and delete operations on DBMS table  
**CO3.** Write a server-side program using servlet and JSP to store the data sent from client, process it and store it on database.  
**CO4.** Prepare a well formed / valid XML document, schema to store and transfer data.  
**CO5.** Understand various types of attacks and their characteristics.  
**CO6.** Get familiar with network security designs using available secure solutions (such as PGP, SSL, IPsec).

*\*LOCQ: Lower Order Cognitive Question; IOCQ: Intermediate Order Cognitive Question; HOCQ: Higher Order Cognitive Question.*