WEB TECHNOLOGIES
(CSEN 3133)

Time Allotted : 3 hrs   **Full Marks : 70**

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and
<u>any 5 (five)</u> from Group B to E, taking <u>at least one</u> from each group.

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

Group – A
(Multiple Choice Type Questions)

1. Choose the correct alternative for the following: **10 × 1 = 10**

    (i)   What is the function of this meta tag <META HTTP-EQUIV="Refresh" CONTENT="2"; URL="http://www.yoursite.com">?
    (a) No action on Browser   (b) It will load yoursite.com instantly
    (b) Browser will be unresponsive   (c) It will load yoursite.com in 2 seconds.

    (ii)   Which of the following code is used to get session in servlet?
    (a) request.getSession()   (b) response.getSession()
    (c) new Session()   (d) none of the above.

    (iii)   Which of the following validation(s) should not be done using JavaScript?
    (a) Age not more than 120 years   (b) Valid no. of digits in phone no field
    (c) Password   (d) Username.

    (iv)   What is the effect of <h3 style="background-color:rgba(0,0,255,0.5)">I like HTML Tags</h3> in Browser?
    (a) Display the text with specified background color with half transparency
    (b) Display the text with specified background color with no transparency
    (c) Text will not be visible
    (d) None of them.

    (v)   Which attribute of <img> tag link the tag with corresponding <map> tag?
    (a) usemap   (b) usearea
    (c) linkmap   (d) none of them.

    (vi)   What will happen when user click on this link
     go to ... ?
    (a) Redirected to the web page specified in url
    (b) Reach to a particular anchor named "destination_lable" of page specified in url
    (c) No visible action
    (d) Page not found error will appear.

(vii) Suppose your current location is http://www.heritagecse.com/html/ want to reference the http://www.heritagecse.com/html/tutorial/help.aspx page using href attribute of <a>, what root relation URL should you use in href attribute?
(a) /help.aspx   (b) /html/tutorial/help.aspx
(c) /tutorial/help.aspx   (d) help.aspx.

(viii) 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 them.

(ix) What is the effect of this CSS rule P: first-line {font-style:small-caps}?
(a) Converts the content of a paragraph into capital letters
(b) Converts the first line of a paragraph to small capital letters
(c) Converts the content of a page to small capital letters
(d) No visible effect.

(x) Code: var fruits = ["Banana", "Orange", "Apple"];
var energy = fruits._____(" , ");
Output: Banana, Orange, Apple
Fill in the blank in the code with correct option.
(a) join   (b) slice   (c) splice   (d) split.

Group – B

2. (a) Write the difference between Client-Side Scripting and Server-Side Scripting. [(CO1) (Analyze/LOCQ)]
(b) Write an external CSS file to style a table so that the odd rows have a yellow background and a header row has style white text and a black background color. [(CO1) (Remember/IOCQ)]
(c) 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)(Evaluate/HOCQ)]

5 + 5 + 2 = 12

3. (a) Differentiate between GET and POST Method. [(CO1)(Analyze/IOCQ)]
(b) Write HTML code for dividing the browser window into two horizontalparts (left part is content and right part is main). Left part should containthe anchors clicking on which corresponding page to be displayed at theright part. Clearly state the assumptions regarding the developed code. [(CO1)(Evaluate/HOCQ)]
(c) On clicking the link, a new page opens in an iframe in the same page. Also, initially the link colour is green, on clicking that link the colour changes to red. Write the stylesheet code corresponding to the above functionality. [(CO1)(Remember/IOCQ)]

3 + 5 + 4 = 12

Group – C

4. (a) What is XML? Why is XML superior to other forms of data exchange? [(CO4)(Analyze/IOCQ)]
    (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, id, gender and address. Address has the subelement street, city, region, postalcode, countrycode. Street has two subelements street1 and street2. Countrycode has an attribute c_id. Write an external DTD to validate this XML. [(CO4)(Remember/LOCQ)]
    (c) How the value of a textbox is accessed using JavaScript? [(CO1)(Understand/IOCQ)]

    (2 + 2) + (2 + 4) + 2 = 12

5. (a) Car number plates in West Bengal are typically of the format WB06C8282. The first two letters correspond to the state followed two digits, followed by an alphabet and then followed by 4 digits. Write a regular expression that will validate the above format. [(CO4)(Understand/IOCQ)]
    (b) Using JavaScript validate a form containing username and e-mail id with the following validation rules
    *   Both the fields are to be filled.
    *   E-mail id should be in a proper format.
    *   Username should not consist of numbers only. [(CO1)(Evaluate/HOCQ)]
    (c) Explain briefly with diagram the life cycle of a servlet. [(CO3),(CO2)(Remember/IOCQ)]

    2 + 6 + 4 = 12

Group – D

6. (a) What is the difference between Prepared and Callable statements? [(CO2)(Evaluate/IOCQ)]
    (b) Assume a table EMP [fields: ID, NAME, SALARY, AGE] 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 out the Employees above 40 years of age who get salary above Rs 10,000 per month
    (iv) Display the result
    (v)   Close the connection.
        [(CO2) (Remember/HOCQ)]
    (c) Explain what happens in the background when a JSP page is accessed by a user from a server that supports JSP. [(CO3)(Understand/IOCQ)]

    3 + 6 + 3 = 12

7. (a) What is difference between scriptlet and expression? Explain with example. [(CO3)(Analyze/LOCQ)]

    (b)   Write a simple JSP to count and display the number of times a page has been visited in a single session. [(CO3),(CO3)(Remember/LOCQ)]

    (c)   What is difference between scriptlet and expression? State the main objectives of J2EE. [(CO3)(Understand/IOCQ)]

4 + 3 + (2 + 3) = 12

Group – E

8.   (a)   What is packet filtering firewall? Briefly explain its working principle. [(CO6)(Remember/LOCQ)]

    (b)   Explain brute force attack and man-in-the -middle attack. [(CO5)(Understand/LOCQ)]

    (c)   What is VPN? Why VPN is required? [(CO6)(Analyse/IOCQ)]

(1 + 3) + (2 + 2) + (2 + 2) = 12

9.   (a)   What is meant by a spoofing attack? [(CO5)(Remember/LOCQ)]

    (b)   Describe in brief the types of spoofing attack. [(CO5)(Understand/LOCQ)]

    (c)   Consider the case of the SYN Flood attack and explain briefly what a Denial of Service attack is [(CO5)(Analyse/IOCQ)]

2 + 6 + 4 = 12

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Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	33.33%	44.79%	21.88%

Course Outcome (CO):
After the completion of the course students will be able to
CSEN3133.1. Understand the basic tags of HTML, CSS, java script and DHTML.
CSEN3133.2. Connect a server-side program using servlet and JSP to a DBMS and perform insert, update and delete operations on DBMS table.
CSEN3133.3. Write a server-side program using servlet and JSP to store the data sent from client, process it and store it on database.
CSEN3133.4. Prepare a well formed / valid XML document, schema to store and transfer data.
CSEN3133.5. Understand various types of attacks and their characteristics.
CSEN3133.6. 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

Department & Section	Submission Link
CSE - A + B + C	https://classroom.google.com/c/NDA2MTY1NDMxOTcy/a/NDYzODM0MTY5MjMz/details