

**WEB TECHNOLOGY
(MCAP 2102)**

Time Allotted : 3 hrs

Full Marks : 70

Figures out of the right margin indicate full marks.

*Candidates are required to answer Group A and
any 5 (five) from Group B to E, taking at least one 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) HTTP stands for _____
(a) Hyper Text Translation Program (b) Hyper Text Transfer Protocol
(c) Hyper Transfer Text Program (d) Hyper Translation Text Protocol.
- (ii) Which of these is a properly formatted link?
(a) HITK
(b)
(c) <link location="www. heritageit.edu">HITK
(d) HITK
- (iii) What is the correct HTML for creating a checkbox?
(a) <check> (b) <input type="checkbox">
(c) <checkbox> (d) <input type="check">
- (iv) What is the default value of the CSS property 'position'?
(a) absolute (b) static (c) relative (d) fixed
- (v) Which HTML element is used for JavaScript?
(a) <scripting> (b) <jvscript> (c) <jscript> (d) <script>
- (vi) In Hypertext Transaction, term CONNECT is used for
(a) Connection Generation (b) Connection termination
(c) Active Connection (d) Reserved Connection
- (vii) What does /[^(]* regular expression indicate ?
(a) Match one or more characters that are not open parenthesis
(b) Match zero or more characters that are open parenthesis
(c) Match zero or more characters that are not open parenthesis
(d) Match one or more characters that are open parenthesis.
- (viii) What is the correct way to include the file "demo.php" in PHP?
(a) <!-- include file="demo.php" --> (b) <?php include "demo.php"; ?>
(c) <?php include:"demo.php"; ?> (d) <?php include file="demo.php"; ?>

- (ix) What is the correct JavaScript syntax to change the content of the HTML element below to "MCA 3rd Sem"?
- `<p id="test">Semester Examination </p>`
- (a) `#test.innerHTML = "MCA 3rd Sem";`
(b) `document.getElementById("p").innerHTML = "MCA 3rd Sem";`
(c) `document.getElementById("test").innerHTML = "MCA 3rd Sem";`
(d) `document.getElementById("p").innerHTML = "MCA 3rd Sem";`
- (x) Which superglobal variable in PHP holds information about headers, paths, and script locations?
- (a) `$_SESSION` (b) `$_GET` (c) `$GLOBALS` (d) `$_SERVER`

Group - B

2. (a) What is a Sitemap? What are the benefits of using a site map? [(CO2) (Understand /LOCQ)]
(b) What is Responsive Web Design? What are the pros and cons of responsive web design? [(CO1) (Understand/LOCQ)]
(c) Differentiate between a web browser and a web server. [(CO1) (Understand/LOCQ)]
4 + 4 + 4 = 12
3. (a) What is the difference between radio buttons and check boxes when implemented using HTML? (CO3)(Understand/LOCQ)]
(b) How can you give an alternate text for an image so that the text is displayed when the image cannot be loaded? Show with an example. (CO3)(Apply/IOCQ)]
(c) Design an HTML form for student registration using suitable types of input elements for user name, password, date of birth, phone number, e-mail id, gender, and provisions for submit and reset. [(CO2, CO3)(Apply/IOCQ)]
3 + 2 + 7 = 12

Group - C

4. (a) What is the purpose of adding CSS to a webpage? [(CO3)(Understand/LOCQ)]
(b) Differentiate between class selector and id selector in CSS with relevant examples. [(CO3)(Analyse/IOCQ)]
(c) Explain with suitable examples pseudo-classes and pseudo-elements in CSS. [(CO3)(Understand/LOCQ)]
2 + 4 + 6 = 12
5. (a) What is an XML schema? What are the limitations of Document Type Definitions (DTDs)? How these limitations are overcome using XML schema? [(CO5)(Understand/LOCQ)]
(b) Create an XML with the following specification and also write a DTD for it: Customer id (unique), Customer name, Mobile number (can be more than one), Address containing state, pincode, country, Credit card (may not be present) containing credit card number and credit card type(domestic or international). [(CO5)(Apply/IOCQ)]
(2 + 1 + 2) + 7 = 12

Group - D

6. (a) Mention any three HTTP response status codes and state their interpretation. [[CO1](Remember/LOCQ)]
 (b) Explain with suitable example(s) how to add an element to an HTML page with JavaScript. [[CO4](Apply/IOCQ)]
 (c) Write a JavaScript function that accepts a string as a parameter and find the longest word within the string. [[CO4](Apply/IOCQ)]
3 + 5 + 4 = 12
7. (a) What are the components of an HTTP request? [[CO1](Remember/LOCQ)]
 (b) Explain with suitable examples the usage of JavaScript splice() method on an array. [[CO4](Understand/LOCQ)]
 (c) Write a JavaScript function that accepts two arguments, a string and a letter and the function will count the number of occurrences of the specified letter within the string in a case-insensitive way. Example: Sample arguments: 'MCA students of Second year','s', Expected output: 3 [[CO4](Apply/IOCQ)]
3 + 3 + 6 = 12

Group - E

8. Create a web application to register employee details viz. employee number, name, department, basic salary and store the information in a database. Provide functionalities to
 (i) calculate the gross salary (basic + HRA=15% of basic + Other Allowance=10% of basic) to complete the details of an employee and
 (ii) accept department name and display the employee details department wise. [[CO2, CO3, CO6](Create/HOCQ)]
12
9. (a) Contrast and compare between match and switch in PHP. [[CO6](Analyze/IOCQ)]
 (b) Given that server name is 'localhost', username is 'mca@2ndyear', write a PHP script to connect to a MySQL database **semexamDB** and fetch all the records from table **students** in it. [[CO6](Apply/IOCQ)]
 (c) Write a function in PHP called inside_out() that will accept an array and return it with its innermost elements swapped with its outer most elements. For example, the call inside_out(array("Let", "us", "see", "if", "it", "works")) would result in: ("see", "us", "Let", "works", "it", "if"). The array should only be altered if it has an even number of elements. [[CO6](Apply/IOCQ)]
3 + 4 + 5 = 12
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Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	38.54	48.95	12.5

Course Outcome (CO):

After the completion of the course students will be able to

- C01: Identify the main components and functionality of the web, web browsers and servers.
- C02: Apply techniques useful in the design and development of web projects including those like site maps, wireframes, storyboarding.
- C03: Develop simple web pages using HTML5 and Cascading Style Sheets.
- C04: Integrate JavaScript with HTML pages to create dynamic effects.
- C05: Represent web data using XML.
- C06: Create dynamic, database-driven web applications using PHP and MySQL.

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