Graphic Era
HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

End Term (Even) Semester Examination May-June 2025

Roll no...........................'.....

Name of the Program and semester: B.Tech (CSE Core, AI/ML) VI Semester
Name of the Course: Full Stack Web Development
Course Code: TCS-693

Time: 3 hour   Maximum Marks: 100

Note:
- *(i)* All the questions are compulsory.
- *(ii)* Answer any two sub questions from a, b and c in each main question.
- *(iii)* Total marks for each question is 20 (twenty).
- *(iv)* Each sub-question carries 10 marks.

Q1.   (2X10=20 Marks) (CO1)
a. Explain the role of the browser in rendering an HTML document. How do you add meta tags to provide information about a web page?
b. Explain the Box Model in CSS, including its components and how it affects the layout of elements on a webpage. Additionally, differentiate between Pseudo-classes and Pseudo-elements in CSS with suitable example.
c. Create a static web page using Table Tag of HTML.

Specification Table with Hours and Marks						
Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to Internet Technology	2	4	4	0	8
II	Basics of HTML & CSS	6	0	2	6	8
III	Active Server Pages 3.0	6	4	8	0	12
IV	Server Side Coding with VBScript and XML	8	2	4	8	14
V	ASP Objects & Components	10	4	4	6	14
VI	Accessing database with ASP & ADO	10	4	4	6	14
	Total	42	18	26	26	70

Q2.   (2X10=20 Marks) (CO2)
a. Create a JavaScript object called student with properties like name, age, grade, and a method to display the details. Demonstrate how to access and modify its properties.
b. How can you format a date in DD/MM/YYYY format using the Date object? Create a JavaScript function to display the current date and time.
c. How is form validation done using JavaScript? Write a script to validate the below form using regular expressions:

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Employee Details

First name: [_____]

Last name: [_____]

○ Male ○ Female

Employee ID: [_____]

Designation: [_____]

Phone Number: [_____]

[Submit]

Q3.   (2X10=20 Marks) (CO3)
a. How is XML used in web applications? Write a sample XML file that stores a list of books (title, author, year) and create a simple DTD or Schema to validate it.
b. How does XMLHttpRequest work in AJAX? How do you validate a form input field in JavaScript? Create a form validation script that checks if the username and password fields are not empty.
c. Differentiate between the GET and POST methods in form handling using PHP, explaining their use cases and security implications. Write a PHP script to create an associative array of student names and their grades.   (CO4)

Q4.   (2X10=20 Marks) (CO5)
a. How do you connect to a MySQL database using PHP? Write a PHP script to create student table and insert at least 5 records in it.
b. Describe the component lifecycle in Class components using React JS. How does Axios differ from fetch() for making API requests?
c. Write a React component that renders a form with name and email fields, and logs the data on submission. What is the Virtual DOM and how does it improve performance?

Q5.   (2X10=20 Marks) (CO6)
a. List the stages of publishing a website. Discuss tools and techniques involved in each stage.
b. Compare MongoDB with MySQL in terms of data storage, performance, and scalability. List any two popular Content Management Systems (CMS).
c. What is the importance of cross-browser compatibility in web design? Discuss how limited bandwidth affects multimedia-heavy websites and how to optimize for it.