Graphic Era
HILL UNIVERSITY

Roll no...............................

Name of the Course: MTech
Semester: IV
Name of the Paper: Full Stack Web and Multiplatform Mobile App Development
Paper Code: MCS 427

Time: 1.5-hour   **Maximum Marks: 50**

Note:
- *(i)* Answer all the questions by choosing any one of the sub-questions
- *(ii)* Each question carries 10 marks.

Q1.   (10 Marks)
a. Explain the concept of CSS specificity and the cascade. How do different types of selectors affect the final rendering of styles? Provide an example where a lower-specificity rule overrides a higher-specificity rule due to the cascade. (CO1)

OR

b. Explain the concept of functional programming in JavaScript. How do higher-order functions and pure functions contribute to code maintainability? Provide examples. (CO2)

Q2.   (10 Marks)
a. Frames and framesets are considered obsolete in HTML5. What modern techniques (such as CSS and JavaScript) can be used to achieve similar layouts while maintaining accessibility and responsiveness? (CO1)

OR

b. Describe the Same-Origin Policy (SOP) and Cross-Origin Resource Sharing (CORS). How does JavaScript handle cross-origin requests, and what are the security implications? (CO2)

Q3.   (10 Marks)
a. What are the different ways to position an element in CSS? Explain absolute, relative, and fixed positioning with examples. (CO1)

OR

b. What is the purpose of DTD and XML Schema? How do they help in defining the structure of an XML document? Provide an example of both a DTD and an XML Schema. (CO2)

Q4.   (10 Marks)
a. Explain XSLT and its role in transforming XML data. Provide an example of how XSLT can be used to convert an XML file into an HTML table. (CO2)

OR

b. How does Bootstrap improve the development workflow for modern web applications? Discuss its grid system, built-in components, and JavaScript functionalities. Provide an example where Bootstrap simplifies a complex UI layout. (CO1)

Q5.   (10 Marks)
a. Explain the purpose and functionality of the <picture> element in HTML5. How does it improve responsive web design compared to the traditional <img> tag? (CO1)

OR

b. What are the different ways to handle events in JavaScript? Compare inline event handlers, traditional event handlers, and event listeners. (CO2)