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 (Odd) Semester Examination December 2024

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

Name of the Course and semester: MCA 1st Semester
Name of the Paper: Full Stack Developemnt
Paper Code: TMC101

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)
a. Describe the key differences between HTML and XHTML. How does XHTML enforce stricter syntax rules? *(CO-1)*
b. Create a complete XHTML webpage to showcase a university department, incorporating images, hyperlinks, and formatted text. *(CO-1)*
c. Demonstrate how to use different XHTML tags (e.g., <table>, <ul>, <div>) to create a structured web page for a product catalog. *(CO-1)*

Q2.   (2X10=20 Marks)
a. Explain the role of CSS in web development. Compare inline, internal, and external stylesheets with examples. *(CO-1)*
b. Analyze the differences between various CSS selectors (e.g., class, id, pseudo-class) and their implications in dynamic styling. *(CO-1)*
c. Design a responsive webpage using CSS, incorporating media queries for different screen sizes. *(CO-1)*

Q3.   (2X10=20 Marks)
a. Develop a JavaScript program to validate a registration form with fields for name, email, and phone number. *(CO-2)*
b. Analyze the role of the Document Object Model (DOM) in dynamic web development. Provide examples of DOM manipulation using JavaScript. *(CO-2)*
c. Critique the limitations of JavaScript in handling complex events or animations compared to modern frameworks. *(CO-2)*

Q4.   (2X10=20 Marks)
a. Analyze the differences between GET and POST methods in PHP, highlighting their advantages and use cases. *(CO-3)*
b. Write a PHP script to create a simple login system with session handling. *(CO-3)*
c. Evaluate the impact of PHP functions in creating modular and reusable code. Illustrate your answer with examples. *(CO-3)*

Q5.   (2X10=20 Marks)
a. Describe the components of the MERN stack, explaining the role of each technology (MongoDB, Express.js, ReactJS, Node.js) in full-stack development. *(CO-4)*
b. Explain the differences between front-end and back-end development in the context of the MERN stack. Highlight how ReactJS and Node.js contribute to this process. *(CO-4)*
c. Analyze the role of Node.js in handling server-side operations and discuss its advantages over traditional server-side languages. *(CO-4)*