CHRIST (Deemed to be University)
Department of Computer Science
MID TRIMESTER EXAMINATION – JULY 2025
PG I Semester

Programme Name: MCA **Max. Marks: 30**
Course Name: Full Stack Development **Time: 2Hrs**
Course Code: MCA 412-1

General Instructions

- Verify the Course code/Course title & number of pages of questions in the question paper.
- Make sure your mobile phone is switched off and placed at the designated place in the hall.
- Malpractices will be viewed very seriously.
- All programs are mandatory.
- After completion, students must upload the PDF and Source code to Google Classroom (GCR) and GitHub
- A single PDF file that includes: Screenshots of the executed outputs and the source code for each question (pasted or inserted clearly)
- A ZIP file containing all source code files (e.g., .html, .js, .css, .jsx, etc.)
- PDF and Zip file must be named using your Roll Number (e.g., 2547123.zip)

Course Outcomes (COs):

The students will able to

CO1: Apply HTML5 semantic features, Git for version control, and Tailwind CSS to develop structured and maintainable websites.
CO2: Analyze and debug server-side applications using Node.js, integrating MySQL to perform efficient CRUD operations and data management.
CO3: Implement Express.js and React.js in both frontend and backend to enable server-side rendering and static site generation.
CO4: Assess and optimize Next.js applications by leveraging server-side rendering (SSR) and static site generation (SSG) to enhance performance and SEO.
CO5: Evaluate web application performance, security, and scalability by implementing best practices in full-stack development and deployment.

Q. No	Questions	Marks	CO	RBT
1	Question 1: E-Shop Explorer Web App **Scenario:** You are developing an **E-Shop Explorer Web App** for an online shopping company. The site allows users to explore top products, search for items by name, view videos, and submit interest forms. It must use HTML5, Tailwind CSS, JavaScript, and include browser and location detection features. (Mobile First Design) **Tasks:** **Frontend UI (HTML5, Tailwind, Media, Form) –** Use **HTML5 semantic elements** and **Tailwind CSS** to build the homepage with: • A <header> with **Tailwind-styled navigation bar** and **Font Awesome icons** • A <section> with a **hero area** containing a heading and background image • An embedded **video** (YouTube or local file) introducing your online store with subtitles (VTT file should be there) • An **audio** clip promoting a featured product • A **form** asking:User name, Email, Product they are interested in • Add **JavaScript validation** to ensure all fields are filled • Use **CSS pseudo-selectors** like :hover on buttons	8	1,2	L3

	Fetch API + Display Products in Div + Search
	
	Use the following API: 🔗 https://fakestoreapi.com/products
	
	• Fetch the **first 8 products** using fetch() and async/await
	  ○ For each product, display:Product Name (title), Price (price), Image (image)
	• Use a **flex or grid layout with containers** to show the products (not cards)
	• Add a **search box** with a button:
	  ○ On button click, **filter and display** only the products whose title includes the typed word (case-insensitive)
	  ○ On Dropdown sort the items based on Product price low to high and high to low
		10	2,3	L3, L4, L6

	JavaScript + Web Storage + Geolocation
	
	• On form submit:
	  ○ Store name and product in localStorage or sessionStorage
	  • On reload, greet the user with a message like:
	
	  "Welcome back, [Name]! You were interested in [Product]."
	
	• Use the **Geolocation API**:
	  ○ On page load, ask for location permission
	  ○ If granted, display user's latitude and longitude
		8	1,2,3	L3, L6

	Responsiveness + Pseudo-Selectors
	
	• Make the site **responsive** using Tailwind's sm:,md:,lg: utilities
	• Apply pseudo-selectors to:
	  ○ Highlight input fields with :focus
	  ○ Change button style on hover with :hover
		4	1,2,3	L3.L6