



VIT

REG. NO. 
SLOT: FI+TF1

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
CONTINUOUS ASSESSMENT TEST - I
FALL SEMESTER 2026-2027

Programme Name & Branch : M.Tech. (Integrated) Computer Science and Engineering
(Data Science)
Course Code and Course Name : MDI3001, Advances in Web Technologies
Faculty Name(s) : All
Class Number(s) : 1626, 1631, 1637
Date of Examination : 14/08/2026
Exam Duration : 90 minutes
Maximum Marks: 50

General Instruction(s):

- Answer All Questions
- M - Max mark; CO - Course Outcome; BL - Blooms Taxonomy Level (1 - Remember, 2 - Understand, 3 - Apply, 4 - Analyse, 5 - Evaluate, 6 - Create)
- Course Outcomes (Type the CO statements covered in this question paper. Use the CO number as per the syllabus copy)
 1. Differentiate web protocols and web architecture.
 2. Develop client-side web application.
 3. Implement client-side script using JavaScript.

Q. No	Question	Mod ule	Mar ks
1.	A fast-growing food-delivery startup ("TasteBite") started with a single monolithic web application running on one physical server, handling everything—order placement, restaurant listings, payments, and delivery tracking—from one codebase and one database. The app now crashes during peak dinner which brings down the entire system, including payment processing. The company wants to move to the cloud and redesign its architecture. Identify the most suitable cloud service model (IaaS, PaaS, or SaaS) that TasteBite should adopt for its infrastructure. Redesign the application using a microservices architecture by identifying at least four independent services that address the crashing issue. TasteBite also plans to redesign its user interface as a Single Page Application (SPA). Explain the concept of an SPA and discuss the scripting technologies involved in its development.	1	10
2.	Imagine that you are developing the backend for an e-commerce mobile app similar to Amazon. A user performs the following actions in one session: 1. Opens a product listing page. 2. Adds a review/comment for a product. 3. Updates only their phone number in the profile settings. 4. Replaces their entire saved delivery address. 5. Removes an item from the cart. 6. The app checks whether a large product-image file has changed on the server before re-downloading it. For each of the above operations, identify the most appropriate HTTP method that should be used. Justify your choice. Draw/describe the six steps of a typical HTTP transaction that occur when the user's browser first opens the product listing page (from DNS resolution to connection closure).	2	10
3.	VIT University plans to develop a Single-Page Smart Campus Navigation Portal using the campus map shown below. When a user clicks on the Library, Administration Block, Hostel, and Cafeteria, the corresponding webpage should be displayed in one iframe, while		



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Vellore Institute of Technology
(Approved by the University Grants Commission, India)

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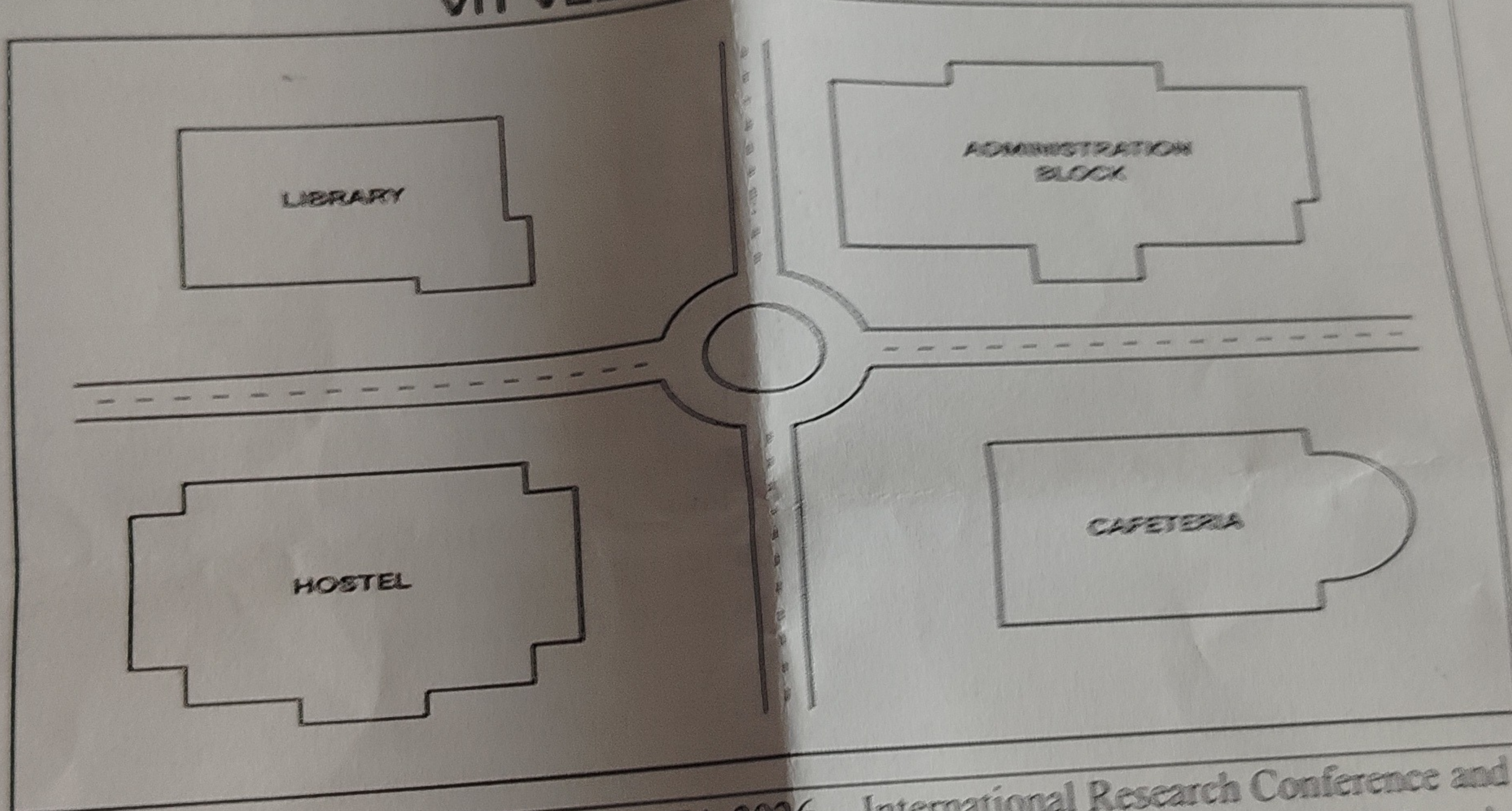
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a related YouTube video for the selected location should be displayed in a second iframe. Design the HTML solution using the Image Map concept by creating appropriate clickable areas, associating the image with the map using the required HTML attributes. Ensure that the YouTube video plays automatically and is muted when loaded. Use the sample URLs provided below for linking the webpages and YouTube videos.

URL	Library	Admin	Hostel	cafeteria
href for content	https://vit.ac.in/lib	https://vit.ac.in/admin	https://vit.ac.in/hostel	https://vit.ac.in/caf
href for youtube	https://youtube/lib	https://youtube/admin	https://youtube/hostel	https://youtube/caf

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4. The university is organizing GRAVITA 2026 – International Research Conference and requires a single-page event registration portal. Design the webpage using HTML and CSS such that the registration form (name, ID number, mobile number) validates user input by using appropriate CSS pseudo-classes. Display the conference title using a CSS position property so that it remains visible while the user scrolls through the page, and keep the conference contact information fixed at the bottom-right corner. Place the conference logo on the page and create a CSS animation using keyframes that moves the image continuously along an inverted triangular path. Ensure the layout demonstrates the correct use of form validation, positioning, and animation features.

2

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5. Design a registration page using HTML and JavaScript. Validate using regular expression, full name (alphabets and spaces only), email address, 10-digit mobile number, Aadhaar number, date of birth (minimum age 18 years), password (minimum 8 characters with uppercase, lowercase, digit, and special character). Validate that fields are not left empty. Display appropriate error messages, and store the values in array and convert to JSON

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