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Code: 20CS52IT

**V Semester Diploma Make-Up Examination, July 2024**

**FULL STACK DEVELOPMENT**

**Time: 3 Hours.**

**Max Marks: 100**

**Instructions:** (1) Answer **ONE** full question from each section.

(2) Each question carries **20** marks.

**Section I**

- 1 a. Explain How digital transformation can bring revolution in healthcare industry. 10  
b. Define Enterprise. Explain the steps involved in the organizing an enterprise. 10
- 2 a. Explain the process of design thinking. Apply the process of design thinking that led to the evolution of electric vehicles. 10  
b. Differentiate between 3 different cloud service models. 10

**Section II**

- 3 a. KSRTC Awatar is an online bus ticket booking mobile application which helps passengers to book a bus ticket for travelling in KSRTC buses across Karnataka state. Users can Install app from the app store and book bus tickets. Users can create online account by signing up through app. Registered users can login and search for bus routes by entering source and destination places along with date of journey. Users can get bus details, seats availability and book/cancel tickets. Once ticket is booked by paying requisite amount through online payment gateway, user will be notified by SMS & email about booking details. Identify and write the user stories for this application. 10  
b. Write test cases for the above application. 10
- 4 a. Zomato is an online food ordering application that helps its users to buy variety of food items. This application allows users to log in for ordering food. Users can search for their favourite food based on rating or price. Uses can select the food items and add to cart. Once the food selection is finalized, user can pay online through online payment methods and order/cancel their food.

- Users will be notified about the order details & delivery of food. Identify and write the user stories for this application. 10
- b.** Write test cases for the above application. 10

### Section III

- 5 a.** Explain state and props with an example in React JS. 10
- b.** Create a spring boot application to maintain Employee details like employee id, employee name & salary in Employee.java - an entity class or data JPA with Employee information.  
Design a Rest Controller with GET, PUT, POST and DELETE Restful APIs. 10
- 6 a.** Differentiate spring and spring boot. 10
- b.** Implement programmatically navigation between different components using react Router. 10

### Section IV

- 7 a.** Describe different spring annotations along with their usage and syntax. 10
- b.** Perform the following operations using MongoDB
- i. Create a student database.
  - ii. Insert 2 records into the student collection with suitable fields.
  - iii. Sort the student by name
  - iv. Search the student by Id
  - v. Remove the student by Id 10
- 8 a.** Describe ACID transaction in MongoDB 10
- b.** Demonstrate with a simple code to secure REST APIs with Spring Security. 10

### Section V

- 9 a.** Differentiate automated and manual deployment process. 10
- b.** Discuss Components of application performance management (APM). 10
- 10 a.** Discuss the Components of Docker Container. 10
- b.** Describe the working Blue-Green and Canary deployment strategies with neat diagram. 10