

<b>Reg. No.</b>																			
-----------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

<b>Question Paper Code</b>	<b>13869</b>
----------------------------	--------------

**B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025**

Seventh Semester

**Information Technology**

(Common to Computer and Communication Engineering)

**20ITEL708 - FULL STACK SOFTWARE DEVELOPMENT**

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

**PART - A (MCQ) (10 × 1 = 10 Marks)**

Answer ALL Questions

	Marks	K- Level	CO
1. The element _____ simply groups items within an enclosed dd tag, though it may associate them with a caption defined by a dt tag (a) Object                      (b) figure                      (c) embed                      (d) none of the mentioned	1	K1	CO1
2. In how many ways can CSS be incorporated in HTML? (a) 1                              (b) 2                              (c) 3                              (d) 4	1	K1	CO1
3. Which is the correct jQuery statement to fade out a <p> element? (a) \$("p").fadeOut();                      (b) \$("#p").fadeOut(); (c) \$(".p").fadeOut();                      (d) \$("p").fadeout();	1	K1	CO2
4. Which method is used to add CSS class to the selected elements? (a) add()                      (b) addClass()                      (c) addClasses()                      (d) AddClasses()	1	K1	CO2
5. In which language is Node.js written? (a) JavaScript                      (b) C                      (c) C++                      (d) All of the above	1	K1	CO3
6. Which node module is used to handle binary data? (a) binary                      (b) buffer                      (c) crypto                      (d) dgram	1	K1	CO3
7. Which scope in Spring ensures that object exists between every request in an HTTP session? (a) Singleton                      (b) Prototype                      (c) Request                      (d) Session	1	K1	CO4
8. How can exceptions handled in Spring MVC? (a) @ExceptionHandler                      (b) @CatchException (c) @ErrorResolver                      (d) @ResolveError	1	K1	CO4
9. Which of the following is supported by Hibernate? (a) HQL                      (b) SQL                      (c) JPQL                      (d) All of the above	1	K1	CO5
10. What is a Kubernetes cluster composed of? (a) Master node and worker nodes                      (b) Virtual machines and containers (c) Load balancers and storage units                      (d) Master node, worker nodes, and a cloud provider	1	K1	CO6

**PART - B (12 × 2 = 24 Marks)**

Answer ALL Questions

11. Write down the significance of front-end technologies for web application development.	2	K1	CO1
12. Differentiate jQuery and Javascript.	2	K2	CO1
13. How to retrieve the textbox value and display alert message in jQuery?	2	K2	CO2
14. How to add list elements within an unordered list in jQuery?	2	K1	CO2
15. List the advantages of Node.js.	2	K1	CO3
16. Compare and contrast ReactJS and AngularJs.	2	K2	CO3
17. What are the major features in different versions of Spring Framework?	2	K1	CO4
18. Classify the core modules of Spring framework.	2	K1	CO4
19. Mention the advantages of ORM over JDBC.	2	K1	CO5

20. Identify the different types of inheritance mapping techniques in Hibernate. 2 K1 CO5
21. Can we lose data stored in a container? If yes justify. 2 K2 CO6
22. Give the docker command that displays the status of all docker containers. 2 K1 CO6

**PART - C (6 × 11 = 66 Marks)**

Answer ALL Questions

23. a) Write a JavaScript program that creates a class called Product with properties for product ID, name, and price. Include a method to calculate the total price by multiplying the price by the quantity. Create a subclass called PersonalCareProduct that inherits from the Product class and adds an additional property for the warranty period. Override the total price calculation method to include the warranty period. Create an instance of the PersonalCareProduct class and calculate its total price. 11 K2 CO1

**OR**

- b) Explain various CSS selectors for developing a HTML page which controls the display of text using uppercase, lowercase and capitalize. Justify the need of selector used in designing the web page. 11 K2 CO1

24. a) Illustrate bootstrap button, button groups and Navigation menu and Bar with suitable examples. 11 K2 CO2

**OR**

- b) Demonstrate the jQuery methods for changing and manipulating HTML elements and attributes. 11 K2 CO2

25. a) Apply Typescript Classes, Interfaces, Namespaces and Modules for a suitable application and justify when to use these technologies. 11 K3 CO3

**OR**

- b) Create a Coin Flipping Application with ReactJS. 11 K3 CO3

26. a) Create a Spring MVC application with three views, first to capture student data for registration using FormTag Library, second to display data and third home page to show a school page. 11 K3 CO4

**OR**

- b) Design and implement CRUD operations in a Spring MVC application. Identify the roles of the controller, service, and repository layers, and provide examples for handling each of the operations: Create, Read, Update, and Delete. 11 K3 CO4

27. a) Design an application that facilitates the mapping of Java objects to database tables using Hibernate. Make use of Plain Old Java Objects (POJO) in the application and explain how annotations and XML configurations are utilized for object-relational mapping. 11 K3 CO5

**OR**

- b) Develop a Hotel Booking application. Design tables and their relationships based on the model classes. Implement relationship mapping with annotations. 11 K3 CO5

28. a) Describe the concept of containers and containerization. What advantages do containers offer compared to traditional virtualization methods, and how do they enhance application development and deployment processes? 11 K2 CO6

**OR**

- b) Discuss the strategies for managing stateful applications in Kubernetes. 11 K2 CO6