

Name:			
Enrolment No:			
UPES End Semester Examination, May 2025			
Course: Microservices and Spring Boot Program: B.Tech. CSE SPZ FULL STACK AI (H & NH) Course Code: CSFS3002		Semester: VI Time : 03 hrs. Max. Marks: 100	
Instructions: Please attempt according to the time provided and given weightage.			
SECTION A (5Qx4M=20Marks) Attempt all questions			
S. No.		Marks	CO
Q 1	Define microservices architecture and explain one key advantage over monolithic architecture.	4	CO1
Q 2	What is the role of an API Gateway in microservices?	4	CO3
Q 3	List different Spring Modules and describe any two.	4	CO1
Q 4	Explain the difference between SOAP and RESTful Web Services.	4	CO4
Q 5	What is the purpose of JWT in Spring Security?	4	CO5
SECTION B (4Qx10M= 40 Marks)			
Q 6	Explain the principles of designing microservices with the Single Responsibility Principle (SRP) and Loose Coupling.	10	CO2
Q 7	Explain how asynchronous communication supports fault tolerance in microservices.	10	CO3
Q 8	Explain in detail the error handling in Angular applications.	10	CO5
Q 9	<p>Explain the differences between tactical and strategic design in Domain-Driven Design (DDD). Illustrate your answer with an example of how bounded context and context mapping help organize microservices.</p> <p style="text-align: center;">OR</p> <p>The following Spring Boot application fails to start. Debug and fix the problem.</p> <pre>@SpringBootApplication public class MyApplication { public static void main(String[] args) { SpringApplication.run(MyApplication.class, args); } }</pre>	10	CO2

	} }		
SECTION-C (2Qx20M=40 Marks)			
Q 10	What is load balancing in Spring boot microservices? Explain the types of load balancing, in detail. What are the applications of load balancing in spring boot microservices?	20	CO5
Q 11	<p>Compare microservices design and implementation between Amazon and Uber. Focus on scalability, availability, and deployment strategies.</p> <p style="text-align: center;">OR</p> <p>Calling /api/greet?name=John results in 404 or error, please fix it.</p> <pre>@RestController @RequestMapping("/api") public class ApiController { @GetMapping("/greet") public String greetUser(@PathVariable String name) { return "Hello " + name; } }</pre>	20	CO3