

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

May-June : 2024-2025

(B. Tech.) Program: Computer Engineering Scheme: IIB

Regular: LY Semester: VIII

Course Code: HCS801 and Course Name: Application security

Date of Exam: 28/5/25

Duration: 02.5 Hours

Max. Marks: 60

Instructions:

- (1) All questions are compulsory.
- (2) Draw neat diagrams wherever applicable.
- (3) Assume suitable data, if necessary.

Q. No.	Question	Max. Marks	CO	BT level
Q 1	Solve any two questions out of three: (05 marks each)	10		
a)	Apply HTTPS configuration to ensure secure communication in web applications and explain its importance with example.		CO2	Ap
b)	How do encoding techniques differ from sanitization? Apply both to a form handling use-case scenario.		CO3	Ap
c)	Explain different types of injection attacks and their impact on a web application with examples		CO1	U
Q 2	Solve any two questions out of three: (05 marks each)	10		
a)	Illustrate how integrating threat modeling early in SDLC helps in reducing security risks.		CO6	U
b)	Explain with an example how segregation of production data can improve application security.		CO4	U
c)	Apply open-source tools to detect and fix CSRF vulnerabilities. Explain the tools and steps used.		CO5	Ap
Q.3	Solve any two questions out of three. (10 marks each)	20		
a)	Demonstrate the exploitation of hidden field manipulation and parameter tampering. Suggest countermeasures using code-level solutions.		CO1	Ap
b)	Explain how to securely manage third-party components and API integrations in modern web applications.		CO2	U

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c)	Apply CVSS scoring to evaluate the severity of discovered web vulnerability. Provide detailed steps and justify your scoring.		CO6	Ap
Q.4	Solve any two questions out of three. (10 marks each)	20		
a)	Analyze how proper error handling and secure logging practices can prevent information disclosure in web applications.		CO3	An
b)	Implement a secure authentication flow using encryption, password hashing, and session tokens. Justify each choice.		CO5	Ap
c)	Explain the difference between secure hardware architecture and software-based defenses with appropriate examples and use cases.		CO4	U
