

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

May-June 2025

(B. Tech / M. Tech.) Program: B. Tech Scheme I/II/IIB/III: II  
Regular/Supplementary Examination: LY Semester: I/II/III/IV/V/VI/VH/VIII

Course Code: ITDLC8022 and Course Name: Cloud Security

Date of Exam: 21/05/2025

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 <b>two</b> questions out of three: (05 marks each)	10		
a)	List and briefly describe the five essential characteristics of cloud Computing according to the NIST model.		CO1	U
b)	Describe how virtualization supports cloud computing.		CO2	U
c)	Analyze different data discovery and classification technique.		CO3	AN
Q 2	Solve any <b>two</b> questions out of three: (05 marks each)	10		
a)	Apply IPv6 addressing and security features to enhance network performance and security in a cloud infrastructure		CO4	AP
b)	Apply Identity and Access Management (IAM) Solutions to Secure Multi-Tenant Cloud Applications.		CO5	AP
c)	Discuss Adapting Audit Methodologies for Different Legal Jurisdictions in Cloud Computing		CO6	U
Q.3	Solve any <b>two</b> questions out of three. (10 marks each)	20		
a)	Discuss the legal risks associated with cloud computing, including data ownership, compliance, and third-party liability.		CO6	U
b)	Describe countermeasure strategies.		CO2	U
c)	Examine cloud data storage architecture.		CO3	AN
Q.4	Solve any <b>two</b> questions out of three. (10 marks each)	20		
a)	Apply the concept of overlay networks and encapsulation to explain how virtual private clouds (VPCs) are created and secured in multi-tenant cloud infrastructures.		CO4	AP

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b)	Apply the principles of Secure Software Development Lifecycle (SSDLC) to develop a plan for building a secure cloud-native application. Include security at each phase.	CO5	AP
c)	Explain the impact of using cloud-based programs and services on Organizational requirements. How do these cloud services address scalabilities, cost efficiency, and resource optimization for businesses?	CO6	U

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