

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

Dec 2025

(B. Tech) Program: Electronics and Telecommunication Scheme: II/IIB

Regular Examination: LY Semester: VII

Course Code: EXDLC7044 and Course Name: Cloud Computing & Security

Date of Exam: 27/11/2025

Duration: 2.5 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)	Explain the essential characteristics of cloud computing.		CO1	U
b)	Explain what I/O virtualization is and why it is used.		CO2	U
c)	Write short note on Network as a Service (NaaS)		CO3	U
Q 2	Solve any two questions out of three: (05 marks each)	10		
a)	write short note on CloudStack, Eucalyptus, OpenStack		CO4	U
b)	Explain with an example how Amazon S3 can be utilized for backup and retrieval of application data in the cloud.		CO5	Ap
c)	Explain how security features such as encryption, firewalls, and multi-factor authentication can be applied to safeguard cloud applications.		CO6	Ap
Q 3	Solve any two questions out of three. (10 marks each)	20		
a)	Explain how IaaS architecture provisions and manages virtualized computing resources in a cloud environment.		CO1	U
b)	Explain the taxonomy of virtualization, its types, models, layers, and their applications in modern computing.		CO2	U
c)	Apply the CDMI model to illustrate how cloud clients interact with storage resources.		CO3	Ap
Q 4	Solve any two questions out of three. (10 marks each)	20		
a)	Explain the architecture of Google File System (GFS) and apply its design principles to how large-scale distributed systems manage data efficiently.		CO4	Ap
b)	Explain Amazon S3 architecture, its object storage in buckets, the main storage classes, and how S3 Glacier differs in cost and performance.		CO5	Ap
c)	Explain common IaaS security issues like VM escape, insecure hypervisors, and data breaches, and suggest ways to mitigate them.		CO6	Ap
