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

	May-June 2025 Program: B.Tech (Electronics and Telecommunication) Scheme: II-B Regular Examination: TY Semester: VI Course Code: EXDLC6054 and Course Name: Database Management System
Date of Exam:	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)	Explain the applications of DBMS over file system in detail		CO1	U
b)	Explain physical & logical data Independence in DBMS with example.		CO2	U
c)	What are different categories of SQL commands? Explain ALTER and DROP commands with their syntax.		CO5	U
Q 2	Solve any **two** questions out of three: (05 marks each)	10		
a)	Explain Network model with suitable example.		CO3	U
b)	What is the need of Normalization? Explain BCNF with suitable example.		CO4	R
c)	Explain ACID properties of transaction in detail.		CO6	U
Q.3	Solve any **two** questions out of three. (10 marks each)	20		
a)	Construct an E-R diagram for a university database consisting of 4 entities: i) Student ii) Department iii) Class iv) Faculty and covert it to table. A student has a unique id, the student can enroll for multiple classes and has at most one major. Faculty must belong to department and faculty can take multiple classes. Every student will get a grade for the class he/she has enrolled.		CO2	A
b)	Explain the concept of 3 tier architecture of DBMS in detail. And		CO1	U

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	In relation R(ABCDEF), functional dependencies are given, FD {AB→C, C→D, C→E, E→F, F→A }, What is the candidate key? Write prime and non-prime			
c)	What is Deadlock? Explain the process of Deadlock detection and prevention.		CO6	U
Q.4	Solve any **two** questions out of three. (10 marks each)	20		
a)	Explain 1NF, 2NF, 3NF with suitable example?		CO4	U
b)	Construct UML class diagram for a Library Management System.		CO3	A
c)	Explain security and authorization in SQL.		CO5	U

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