

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

Subject Code: ITC303 Subject Name: Database Management System Date: 08-12-2022

Nov – Dec 2022				
(B.Tech .) Program: Information Technology				
Examination: SY Semester: III				
Course Code:ITC303 and Course Name: Database management system				
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.				
	Question	Max. Marks	CO	BT level
Q 1	Solve any SIX questions out of eight:	12		
i)	Define DBA. List responsibilities of DBA.	2	CO1	1
ii)	What is Data Independence?	2	CO1	1
iii)	Define attribute. Which are types of attributes.	2	CO2	1
iv)	Explain the need of the constraints in SQL? List the constraints in SQL.	2	CO3	2
v)	What is the purpose of the grant and revoke command in SQL?	2	CO4	1
vi)	Explain any two DDL commands with syntax.	2	CO4	2
vii)	Define normalization. Explain the need of normalization.	2	CO5	2
viii)	Explain the condition when a deadlock occurs with an example.	2	CO6	1
Q.2	Solve any FOUR questions out of six.	16		
i)	Differentiate between file system and database system.	4	CO1	4
ii)	In college management system there are many departments and many students. Faculty teaches various subjects to students. Students enroll for the particular course and various exams are conducted by department. Consider the above scenario and draw an E-R diagram. (Represent proper cardinalities)	4	CO2	4
iii)	Define key. Explain the need of key and types of keys with suitable example	4	CO3	2
iv)	Write the SQL expression for the following Consider Relation student(roll_no,sname,saddress,ph_no,marks) i) Find the name of students whose roll number is greater than 20. ii) Add one record with the values (20, "Rahul", "Malad", 9786756045, 340)	4	CO4	3

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	iii) Remove the data of the student whose name is 'Abhay' and phone no is 88906543. iv) Find the average of the marks from students.			
v)	Define 1NF,2NF,3NF,BCNF.	4	CO5	1
vi)	Explain the transactions state diagram.	4	CO6	2
Q.3	Solve any TWO questions out of three.	16		
i)	Define data abstraction. Explain the types of users in DBMS.	8	CO1	2
ii)	Explain aggregate functions and DML commands with suitable example.	8	CO4	2
iii)	Explain functional dependencies in Normalization.	8	CO5	2
Q.4	Solve any TWO questions out of three.	16		
i)	Explain Specialization, Generalization, and aggregation with suitable examples.	8	CO2	2
ii)	Explain any four operations of relational algebra with a suitable example.	8	CO3	2
iii)	Explain the ACID properties of a transaction.	8	CO6	2
