Name:

Student University Roll No.: | Printed Pages:1

School of Engineering
Second Theory Sessional Examination
Even Semester (AS: 2024-25)

B. Tech: CSE/IOTBC/CCML/CSEAI [Year: 2nd] [Semester: 4th]

Course Title: Database Management System | **Max Marks: 30**
Course Code: NCS4401 | **Time: 1hrs**

Instructions if any: Read the question Carefully.

	SECTION 'A' **Q.N.1. Attempt all parts of the following:**	**CO**	**Marks**
a)	What do you understand by key constraints?	CO1	1
b)	Define specialization with suitable example.	CO1	1
c)	What is the need of foreign key in database?	CO2	1
d)	Explain third normal form.	CO3	1
e)	What is schedule?	CO4	1
	SECTION 'B' **Q.N.2. Attempt any two parts of the following:**	**CO**	**Marks**
a)	Consider the schema R (A, B, C, D, E) suppose following FD's hold: F {E→A, CD→E, A→BC, B→D} State whether the following decomposition of R (A, B, C, D, E) R_1= (A, B, C) and R_2=(A, D, E) a) Find whether decomposition is loss-less or lossy. b) Is the dependency being preserved?	CO3	7.5
b)	Explain transaction and state diagram of a transaction.	CO4	7.5
c)	Write a short note on a) Lock based protocol and b) Two phase locking protocol.	CO4	7.5
	SECTION 'C' **Q.N.3. Attempt any one part of the following:**	**CO**	**Marks**
a)	Explain Normalization. Suppose a relation R (A, B, C, D, E) has FD set **{A→BC, CD→E, B→D, E→A}**, Identify the normal form of FD and What are the candidate key of a R?	CO3	10
b)	Describe a) Inner join and Outer Join with example.	CO2	10
c)	What is Conflict Serializable Schedule? Check the given Schedule S1 is Conflict Serializable or not? S1: R1(X), R2(X), R2(Y), W2(Y), R1(Y), W1(X)	CO4	10

Table 1: Mapping between COs and questions

(Number of COs may vary from course to course)

COs	Questions Numbers	Total Marks
CO1	1. (a, b)	2
CO2	1. (c), 3. (b)	11
CO3	1. (d), 2. (a), 3. (a)	18.5
CO4	1.(e), 2. (b, c), 3. (c)	26

02.05.2025