## SVKM's D. J. Sanghvi College of Engineering

Program: B.Tech in AIML & AIDS Academic Year: 2022 Duration: 3 hours

Date: 23.01.2023

Time: 09:00 am to 12:00 pm

Subject: Database Management Systems (Semester III) Marks: 75

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover page of the Answer Book, which is provided for their use.

- (1) This question paper contains two pages.
- (2) All Questions are Compulsory.
- (3) All questions carry equal marks.
- (4) Answer to each new question is to be started on a fresh page.
- (5) Figures in the brackets on the right indicate full marks.
- (6) Assume suitable data wherever required, but justify it.
- (7) Draw the neat labelled diagrams, wherever necessary.

Question		Max.
No.		Marks
Q1 (a)	i. Discuss Concurrency Control mechanism with examples in details.	[10]
	OR	
	ii. Describe Concurrent Executions and discuss problems associated it.	[10]
Q1 (b)	Explain Database administrator of DBMS with roles and duties.	[05]
Q2 (a)	Explain ER-diagram. Write basic concepts of ER Models with its	[10]
	components. Construct an ER diagram by taking a university database	
	example.	
Q2 (b)	Describe the relational model and relational schema in DBMS.	[05]
Q3 (a)	i. Construct SQL statements for following:	[10]
	Student (Enrno, name, courseId, emailId, cellno)	
	Course(courseId, course_nm, duration)	
	a) Add a column city in student table.	
	b) Find out list of students who have enrolled in "computer" course.	
	c) List name of all courses with their duration.	
	d) List name of all students start with "a".	
	e) List email Id and cell no of all mechanical engineering students.  OR	
	ii. Illustrate the usage of SQL GROUP BY, ORDER BY and HAVING clauses	
	with examples.	[10]
O2 (b)	-	[05]
Q3 (b)	Illustrate the use of Views and Triggers. How to create it?	[05]

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Q4 (a)	i. Examine why normalization needed. Explain the process of normalization.	[10]
	OR	
	ii. Explain Third normal form and Boyce Codd normal form with an example.	[10]
Q4 (b)	Discuss limitations of Relational Database designs.	[05]
Q5 (a)	i. What is No SQL? Discuss types of No SQL databases with example.	[10]
	OR	
	ii. Explain MongoDB database with its need and feature of it in details.	[10]
Q5 (b)	Illustrate the use of Shadow Paging with example.	[05]

All the Best!

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