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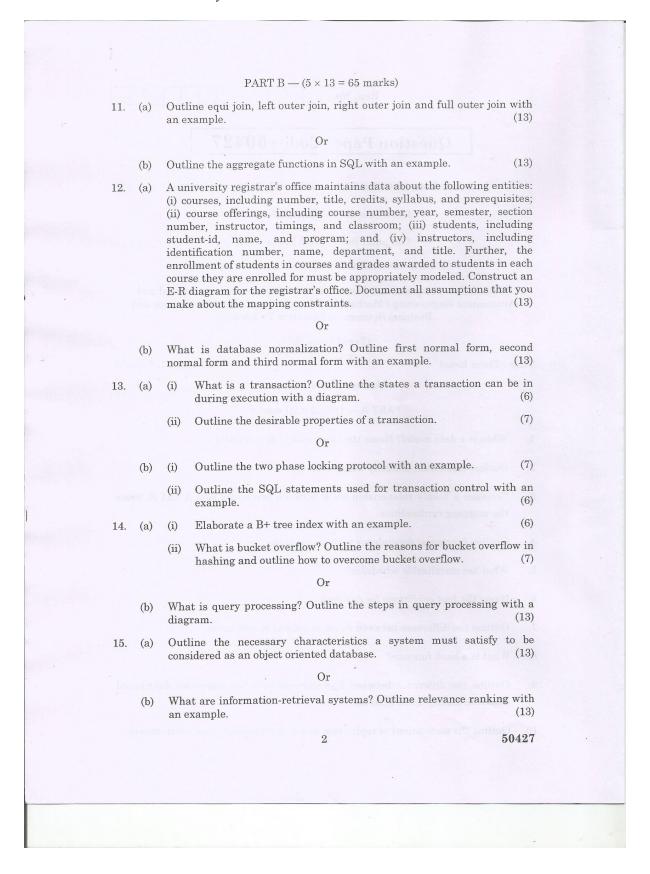
	Reg. No. :
	Question Paper Code: 50427
	B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2023.
	Third/Fourth/Fifth/Eighth Semester
	Computer Science and Engineering
	CS 8492 – DATABASE MANAGEMENT SYSTEMS
	(Common to: Computer and Communication Engineering / Mechanical and Automation Engineering / Mechatronics Engineering / Computer Science and Business Systems/ Information Technology)
	(Regulations 2017)
Tir	ne : Three hours Maximum : 100 marks
	Answer ALL questions.
	PART A — $(10 \times 2 = 20 \text{ marks})$
1.	What is a data model? Name the categories of data models.
2.	Outline referential integrity with an example.
3.	Consider a binary relationship set R between two entity sets A and B, name the mapping cardinalities.
4.	Outline functional dependency with an example.
5.	What are serializable schedules?
6.	Name the four conditions for deadlock.
7.	Outline the difference between dense index and sparse index.
8.	What is a hash function?
9.	Outline the difference between homogeneous and heterogeneous distributed
	database management systems.
10.	Outline the motivations of replication in a distributed database environment

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## PART C — $(1 \times 15 = 15 \text{ marks})$

16. (a) Consider the following scenario for a school admission system for higher secondary classes:

A student is admitted to a group. A group can be Mathematics with Biology, Mathematics with Computer Science, Mathematics with Commerce, Mathematics with Commerce and Computer Science etc. Student can be admitted to a group under a quota. Quota can be General, Ex-service man, Sports, etc. The fees each student must pay depends on the group and quota

- Model an entity relationship diagram for the school admission system. Identify appropriate attributes and relationships.
- (ii) Map the entity relationship diagram to relations.

Or

(b) Consider the following relations for a boat management application for a beach resort:

SAILOR (SID, NAME, DOB, GENDER, RATING)

BOAT (BID, BTYPE, BNAME, COLOR)

BTYPE can take two values (D, S)

D — Deluxe

S — Super Deluxe

SAILS (SID. BID, DOT, SHIFT)

DOT — Date of Trip

SHIFT can take two values — FN or AN

A sailor is assigned a boat on a day. A sailor is permitted to sail the boat for only one shift on a day. The primary keys of each relation is underlined.

Write SQL queries to perform the following:

- (i) List the details of sailors who have rating more than average rating of all sailors.
- (ii) List the details of boats whose type is super deluxe and color is red.
- (iii) List the details of sailors who have been assigned afternoon shift on '24-DEC-2021'.(4)
- (iv) List the details of sailors who have sailed more than fifty times. (4)

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