

**Pre-Semester Examination-2070**

Full marks: 60

Pass marks: 24

Time: 3 hours

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**SET A**

Subject: CSC 253 DATABASE MANAGEMENT SYSTEM

FM: 60  
PM: 24

1. Answer the following question: [2\*5=10]

a. How do you interpret null value in database?

b. What do you understand by canned transaction?

c. What is constraint?

d. When is weak relationship set used in ER-diagram?

e. How physical database design is different from logical database design?

1. a. Draw an ER diagram for database showing Hospital Management System. The hospital maintains data about affiliated hospitals, type of treatment facilities given at each hospital and the patient information. [5]

b. Describe different types of set operations used in SQL? [5]

1. a. Write SQL and relational algebra statements for the following schema:

Food (code, packname, price, description)

Orders (cno, code, qty, date, time)

Customer (cno, cname, contact, address)

1. Find name and contact number of customers who live in 'Satdobato'. [2]
2. Calculate total cost of food offered by customer ‘Hari Bdr’ till now. [ [2]
3. Increase price of all food by 1% which contains onion. (Check onion in description) [2]

b. Describe generalization with example? [4]

1. a. Explain different types of update anomalies? How spurious tuple is generated explain with example. [6]

b. What do you mean by functional dependency? Describe partial and full functional dependency. [4]

1. a. What is transaction? Describe ACID properties. [5]

b. Why scheduling is required during concurrent transaction. [5]

1. a. Describe two phase locking protocol to control concurrent transaction. [5]

b. What are the steps required to perform read(X) and write(X) [5]



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**SET B**

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1. Answer the following question: [2\*5=10]

a. Define data dictionary?

b. What is multi-value attribute?

c. When is weak relationship set used in ER-diagram?

d. Differentiate between entity and entity set?

e. What do you mean by database instance?

1. a. Draw an ER diagram for database showing Restaurant Management System. The restaurant maintains data about affiliated restaurants, different type foods given at each restaurant and the customer information. [5]

b. Describe different types of join operations used in SQL? [5]

1. a. Write SQL and relational algebra statements for the following schema:

Sailors (*sid, sname, rating, age)*

Boats (*bid, bname, color)*

Reserves (*sid, bid, day)*

1. Find the oldest sailors. [2]
2. Insert data in Sailors relation. [2]
3. Find average rating for each color and display as Average. [2]

b. Describe specialization with example? [4]

1. a. Describe 1NF, 2NF and 3NF with suitable example. [6]

b. What do you mean by functional dependency? Describe Armstrong's inference rules.[4]

1. a. What is transaction? Draw transition diagram to show states of transaction. [5]

b. Describe different types of failures. [5]

1. a. Define serial, serializable and deadlock in scheduling concurrent transaction? [5]

b. How can you enforce different levels of security while accessing data? [5]