**Asian School of Management and Technology**

(Affiliated to Tribhuvan University)

Gongabu, Kathmandu

**Full Marks: 60**

**Time: 3 Hrs.**

**SET A**

**Preboard Examination 2080**

**BIM / Fourth Semester / IT 220: Data Base Management System Systemorithms**

***Candidates are required to answer the question in their own words as far as practicable.***

**Group "A"**

**Brief answer questions:**

**Attempt all questions. (10 X 1=10)**

1. Define database.
2. What are the different types of database models?
3. Differentiate between weak and strong entity.
4. What do you mean by relation?
5. What is data integrity?
6. Define relational calculus.
7. What is functional dependency?
8. Define assertion.
9. What is catastrophic failures?
10. Define distributed database.

**Group "B"**

**Short Answers Questions**

**Attempt any five questions. (5 × 3= 15)**

1. Compare between file processing system and database management system.
2. Explain relational database model.
3. U = {A, B, C, D, E, F} and the functional dependencies: AB 🡪C, B🡪E, CF 🡪 D. Find AB and B attribute closure
4. What is the purpose of join? Explain types of join with examples.
5. Define database language? Explain different types of database languages.
6. Discuss time stamp ordering concurrency control protocol.

**Group "C"**

**Long Answer Questions**

**Attempt any three questions. (3× 5= 15)**

1. What is data abstraction? Explain 3 level data abstraction of database system.
2. Define transaction and explain properties of transaction.
3. What is database recovery? Explain shadow paging.
4. Write SQL for :

**DOCTOR (name, age, address)**

**WORKS (name, deptno)**

**DEPARTMENT (deptno, floor, room)**

a**.** List the room and floor of the doctors whose name is ‘Karuna’ and of age 19.

b. Count the number of doctors working in top floor.

c. Display the name and department of the youngest doctor.

d. Delete those doctors whose address start with ‘B’ and works in tenth floor.

e. Update database such that ‘Roshan’ now works in room number 09.

**Group "D"**

**Comprehensive Questions**

**Attempt all questions. (2 × 10 = 20)**

1. Why do you need EER diagram? How specialization and generalization can be shown. Illustrate the constraints and characteristics of specialization and generalization.
2. What are the types of database anomaly? How can you normalize following table up to 3NF

**RNo Address Status pno Qty**

R01 Chitwan 300 p1 1500

p2 1955

p3 2000

R02 Dhangadhi 100 p1 1001

p2 1200

R03 Biratnagar 200 p2 2500

R04 Bhaktapur 300 p3 1500

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