**Asian School of Management and Technology**

(Affiliated to Tribhuvan University)

Gongabu, Kathmandu

**Full Marks: 60**

**Time: 3 Hrs.**

**SET B**

**Preboard Examination 2080**

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

***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 management system.
2. What is weak entity?
3. Define tuple relational calculus.
4. How specialization is differ from generalization?
5. What do you mean by multi-valued dependency?
6. What are the aggregate functions in SQL?
7. What is trigger?
8. List any two importance of concurrency control.
9. Why do we need database recovery?
10. Define BigData?

**Group "B"**

**Short Answers Questions**

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

1. What are the role and responsibilities of DBA?
2. Describe domain and referential integrity constraints.
3. Explain object oriented database model.
4. Compare between DML and DDL.
5. How data can be recover form catastrophic failures?
6. What is NoSQL? What are the features of NoSQL?

**Group "C"**

**Long Answer Questions**

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

1. What is schema? Describe between logical data independence and physical data independence.
2. Explain 1NF, 2NF, 3NF and BCNF with example.
3. Define relational algebra? Explain, any three operations that are used in Relational algebra.
4. Write SQL for

**Employee (eid, ename, street, city)**

**Company (company\_name, city)**

**Works (eid, company\_name, salary)**

1. Find the name of the employee who lives in city ‘**Kathmandu**’ and street ‘**Balaju**’.
2. Find the name of company located at ‘**Gorkha**’
3. Increase the **salary** of all employees by 20 %.
4. Delete the record of an employee who works at ‘**ABC**’ company.
5. Insert the record of an employee ‘**Kumar**’ who lives in **Butwal**, **newroad** and currently working at ‘**ABC**’ company located at **Kathmandu** with earning Rs. **55000** per month.

**Group "D"**

**Comprehensive Questions**

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

1. What is cardinality constraints? Illustrate How ER-diagram can be converted into table.
2. How transaction is committed? Show different state of transaction with suitable diagram. Explain how two phase locking protocol control concurrency.

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