

PURBANCHAL UNIVERSITY

2024

M. Sc. in Information System Engineering / Second Semester / Final

Time: 03:00 hrs.

Full Marks: 60/Pass Marks: 30

MIE122: Advanced Database Management

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer ALL questions.

1. ✓ Show your familiarity with concept of VIEWS in DBMS with its purpose and features. 8
2. ✓ Construct an E-R diagram for a student registration system. Assume necessary data where required. Convert this diagram in to relation schema. 6+4
3. ✓ Define relational algebra. Explain different types of Join operations with practical example. 8
4. ✓ Consider an employee database, where primary keys are underlined.

employee (employee_name, street, city)

works (employee_name, company_name, salary)

company (company_name, city)

manages (employee_name, manager_name)

Give an expression in SQL for each of the following queries.

- a) Find names of all employees who works for Sanima Bank.
- b) Find names and cities of residence of all employees who works for Sanima Bank
- c) Find all employees in the database who live in the same cities and on the same street as do their managers.
- d) Give all employees of Sanima Bank a 10 percent raise. 10

Contd. ...

(2)

5. Explain the transaction in DBMS. Explain how the integrity of database can be ensured during the execution of concurrent transactions in DBMS. 8

6. **Write short notes on any FOUR**

4×4=16

- (a) Functional dependency
- (b) Referential Integrity
- (c) COMMIT and ROLLBACK
- (d) Role of DBA
- (e) BCNF

