

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

$4 \times 4 = 16$

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

