

POKHARA UNIVERSITY

Level: Bachelor

Semester – Spring

Year: 2020

Program: BE

Full Marks: 70

Course: Database Management System

Pass Marks: 31.5

Time: 2 hrs.

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

The figures in the margin indicate full marks.

Attempt all questions

Section - A: (5×10=50)

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|---------|--|----|
| Q. N. 1 | Illustrate redundancy and the problems that it can cause? Compare and Contrast file Systems with database systems? | 10 |
| Q. N. 2 | Explain the importance of data modeling. Draw E-R diagram for a departmental store that keeps the information about customer, supplier and item. | 10 |
| Q. N. 3 | List all security issues you are familiar that can breaches security. Encryption and Decryption are very important part in cryptography so justify this statement with suitable example. | 10 |

OR

- | | | |
|---------|---|----|
| | What is the importance of indexing in file organization? Write in detail about Hash based Indexing and Tree based Indexing? | 10 |
| Q. N. 4 | What are equivalent query explain with example. Explain the steps in query processing with diagram in detail. | |
| Q. N. 5 | Explain ACID properties of transactions with examples of each property. Also explain the importance of concurrency control in transaction processing. | 10 |

Section - B: (1×20=20)

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| Q. N. 6 | Write both relational algebra and SQL statement for the following schemas (underline indicates primary key): | 20 |
|---------|--|----|

Employee (Emp_No , Name , Address)

Project (PNo ,Pname)

Workon (Emp_No , PNo)

Part (Partno ,Part_name , Qty_on_hand)

Use (Emp_No , PNo , Partno ,Number)

- Listing all the employee details who are not working yet .
- Listing partname and Quantity on hand those were used in DBMS project.
- List the name of the projects that are used by employee from London.
- Modify the database so that Jones now lives in USA.
- Update address of an employee 'Japan' to 'USA'.