

[4]

4 × 10 = 40

SECTION 'C'

Long Answer questions (Word limit 400-450 words.)

UNIT-I

Q.1. What is data model? Explain types of data model in DBMS.

OR

Describe various relational algebra operations with example.

UNIT-II

Q.2. Explain various commands of DDI and DML.

OR

Explain 3NF and BCNF with example.

UNIT-III

Q.3. What is a process? What is a process state? Mention the various states of a process.

OR

What are the various memory management technique? Explain.

UNIT-IV

Q.4. Explain various disk-scheduling algorithms.

OR

Write short note on following –

- (i) Deadlock
- (ii) Interrupt handler

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[1]

ROLL NO.....

MATH. 403/21

IV SEMESTER EXAMINATION, 2021

M. Sc. (MATHEMATICS)

PAPER-III

OPERATING SYSTEM & DATABASE MANAGEMENT SYSTEM

TIME: 3 HOURS

MAX.- 70

MIN.- 14

Note: The question paper consists of three sections A, B & C. All questions are compulsory.

Section A- Attempt all multiple choice questions.

Section B- Attempt one question from each unit.

Section C- Attempt one question from each unit.

SECTION 'A'

2 × 8 = 16

MCQ (Multiple choice questions)

1. Which of the following refers to the level of data abstraction that describes exactly how the data actually stored? exactly how the data actually stored?
 - (a) Conceptual level
 - (b) Physical level
 - (c) File level
 - (d) Logical level
2. Which one of the following is a type of data Manipulation command?
 - (a) Create
 - (b) Alter
 - (b) Delete
 - (d) All of the above

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3. Which of the following is a top-down approach in which the entity's higher level can be divided into two lower sub-entities?
- (a) Aggregation (b) Generalization
(c) Specialization (d) All of the above
4. Which of the following key is generally used to represent the relationships between the tables?
- (a) Primary key (b) Foreign key
(c) Secondary key (d) None of the above
5. A Process Control Block (PCB) does not contain which of the following-
- (a) Code (b) Stack
(c) Bootstrap program (d) Data
6. The number of processes completed per unit time is known as-
- (a) Output (b) Throughput
(c) Efficiency (d) Capacity
7. Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called?
- (a) Fragmentation (b) Paging
(c) Mapping (d) None of the above
8. What is the full form of RMT?
- (a) Remote Method Installation
(b) Remote Memory Invocation
(c) Remote Memory Installation
(d) Remote Method Invocation

[3]

SECTION 'B'

4 × 6 = 24

Short Answer Type Questions (Word limit 200-250 words.)

UNIT-I

- Q.1.** What are the roles of DBMS? Explain.

OR

What do you mean by relational calculus? Describe.

UNIT-II

- Q.2.** What is SQL? Explain data types used in SQL.

OR

What is Normalization? Write down their benefits.

UNIT-III

- Q.3.** What do you understand by time sharing system? Describe.

OR

Describe context switch with example.

UNIT-IV

- Q.4.** What is cache memory? Describe.

OR

What do you understand by process scheduling? Describe types of scheduling.