Rall	Nο	
IVUII	110.	

D - 985

M. A./M. Sc. (Fourth Semester) (Main/ATKT) EXAMINATION, May-June, 2020

MATHEMATICS

(Optional)

Paper Third (A)

(Fundamental of Computer Science)

(Operating System and Database Management System)

Time: Three Hours [Maximum Marks: 70

Note: Attempt all Sections as directed.

Section—A 1 each

(Objective/Multiple Choice Questions)

Note: Attempt all questions.

Choose the correct answer:

- 1. The term is used to refer to a row.
 - (a) Attribute
 - (b) Tuple
 - (c) Field
 - (d) Instance
- 2. A collection of related data:
 - (a) Information

[2] D-985

- (b) Valuable information
- (c) Database
- (d) Metadata
- 3. Which of the following is a fundamental operation in relational algebra?
 - (a) Set intersection
 - (b) Natural join
 - (c) Assignment
 - (d) None of the mentioned
- 4. Which of the following is the comparison operator in tuple relational calculus?
 - $(a) \Rightarrow$
 - (b) =
 - (c) ∈
 - (d) All of the mentioned
- 5. Which one of the following is used to define the structure of the relation, deleting relations and relating schemas?
 - (a) DML (Data Manipulation Language)
 - (b) DDL (Data Definition Language)
 - (c) Query
 - (d) Relational Schema
- 6. In the normal form a composite attribute is converted to individual attributes.
 - (a) First
 - (b) Second
 - (c) Third
 - (d) Fourth

[3] D-985

- 7. To access the services of operating system the interface is provided by the
 - (a) System calls
 - (b) API
 - (c) Library
 - (d) Assembly instructions
- 8. The system which allows only one process execution at a time is called
 - (a) Uniprogramming system
 - (b) Uniprocessing system
 - (c) Unitasking system
 - (d) None of the mentioned
- 9. If one or more devices use a common set of wires to communicate with the computer system, the connection is called:
 - (a) CPU
 - (b) Monitor
 - (c) Wirefull
 - (d) Bus
- 10. In distributed system each processor has its own:
 - (a) local memory
 - (b) clock
 - (c) both local memory and clock
 - (d) None of the mentioned

Section—B 2 each

(Very Short Answer Type Questions)

Note: Attempt all questions in 2-3 sentences.

1. Define database administrator.

[4] D-985

- 2. Define Network Data Model.
- 3. Write name of fundamental operation of relational algebra.
- 4. Define relational calculus.
- 5. What is normalization?
- 6. Define data definition language (DDL) in SQL.
- 7. What is operating system?
- 8. What is processor management?
- 9. Write any two feature of distributed system.
- 10. Define input/output management.

Section—C 3 each

(Short Answer Type Questions)

Note: Attempt all questions in 75 words each.

- 1. Write advantages of DBMS.
- 2. Write a short note on relational algebra.
- 3. Explain integrity constraints.
- 4. What are the main functions of operating system?
- 5. Explain network system.

Section—D ? each

(Long Answer Type Questions)

Note: Attempt any *five* questions. Write answer in 150 words ech.

- 1. Explain architecture of database system.
- 2. Explain relational calculus in detail.
- 3. How can we obtain Boyce Codd normal form? Compare.
- 4. Write a short note on memory management.
- 5. Explain concurrency and security.
- 6. What is process? Explain process control block (PCB).
- 7. Explain the role of database administrator.
- 8. Explain different language of SQL.