# SEM2023

## M.Sc. (IInd Semester) Examination, 2021
## CYBER SECURITY

Paper – MCSEC–203

## (DBMS)

*Time : 1½ Hours* ]　　　　　　　　　　　*[ Maximum Marks : **40***

*Note* :–　The question paper contains three Sections.

**Section–A**　　　　　**(Marks : 1 × 10 = 10)**

*Note* :–　Answer all the *ten* questions carries **1** mark each. The answer should not exceed **50** words.

**Section–B**　　　　　**(Marks : 3 × 5 = 15)**

*Note* :–　Answer *five* questions by selecting at least *one* question from each Unit. Each question carries **3** marks. Answers should not exceed **200** words.

**Section–C**　　　　　**(Marks : 5 × 3 = 15)**

*Note* :–　Answer *three* questions by selecting *one* question from each Unit. Each question carries **5** marks. The answer should not exceed **500** words.

**Section–A**

1.　(i)　　What is a Schema ?

　　(ii)　　What is Data Independence ?

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(iii)   Differentiate between degree and cardinality of relationship.

(iv)    What are existential and universal quantifiers and what are they used for ?

(v)     What is a DML Statement ?

(vi)    What is Cartiesian Product ?

(vii)   Explain ALTER TABLE.

(viii)  What is a Timestamp ?

(ix)    What is a Checkpoint ?

(x)     What is a Schedule ?

## Section–B

### Unit–I

2.  Explain the weak entity set and the strong entity set. How are they different ?

3.  Explain the concept of functional dependency and fully functional dependency.

4.  Explain Hierarchical Model.

### Unit–II

5.  Discuss different type of keys in Relational Model.

6.  What is Union Compatibility ? Which operations in relational algebra require union compatibility and why ?

7.  What is the use of GROUP by clause ? Explain with an example.

### Unit–III

8.  What do you understand by Serializability ?

9.  Discuss various locks.

10. What is a data warehouse ?

## Section–C

### Unit–I

11. Discuss the steps for designing an ER diagram with the help of an example.

12. Explain BCNF using suitable example. Why is it considered stronger than 3NF ?

### Unit–II

13. Write a PL/SQL code to display the total salary jobwise using cursors.

14. What is a Database Trigger ? What functions are performed by a trigger ?

### Unit–III

15. What happens when  :

    (a)    Transaction is Partially Committed

    (b)    Transaction is failed

    (c)    Transaction is rolled back ?

16. What is deadlock how will you handle it ? Explain.