

Roll No. : .....

Total No. of Questions : 16 ]

[ Total No. of Printed Pages : 3

# SCYS-327

M.Sc. (Computer Science) (IIIrd Semester)  
Examination, 2021

## CYBER SECURITY

Paper - MCSEC-304

(SQL)

Time : 1½ Hours ]

[ Maximum Marks : 40

**Note :-** This question paper contains three Sections.

### Section-A

(Marks : 1 × 10 = 10)

**Note :-** Answer all *ten* questions (Answer limit **50** words). Each question carries 1 mark.

### Section-B

(Marks : 3 × 5 = 15)

**Note :-** Answer any *five* questions by selecting at least *one* question from each Unit (Answer limit **200** words). Each question carries 3 marks.

### Section-C

(Marks : 5 × 3 = 15)

**Note :-** Answer any *three* questions by selecting *one* question from each Unit (Answer limit **500** words). Each question carries 5 marks.

### Section-A

1 each

1. (i) Write the syntax for Insert command in SQL.
- (ii) Write uses of views.

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- (iii) Write short note on Nested Queries.
- (iv) What is an objective of the normalization ?
- (v) Explain about Deadlocks.
- (vi) What is the minimal Normal Form that a relation must satisfy and why ?
- (vii) Explain loop statements with example.
- (viii) What are recovery techniques ?
- (ix) Explain concept of datawarehousing.
- (x) Write steps to deal with starvation.

**Section–B**

3 each

**Unit–I**

- 2. By considering an example describe the various data update operations in SQL.
- 3. Explain Date/Time functions with example.
- 4. Explain stored procedure with example.

**Unit–II**

- 5. What is Functional Dependency ? Explain it briefly.
- 6. What are desirable properties of Transaction ?
- 7. Explain concept of Serializability in detail.

**Unit–III**

- 8. Explain the various deadlock prevention protocols.
- 9. State and explain two-phase locking protocol.
- 10. Explain the concept of cursors with example.

**Section–C**

5 each

**Unit–I**

- 11. How to create triggers in the SQL ? Explain with example.

12. Consider the following database :

Book (BID, Book\_Name, Date\_Issue, Author, Student\_ID)

Student (Student\_ID, Student\_name, Course)

- (i) List all the students whose name's second character is 'e'.
- (ii) List all the student who have issued the book in the month of June.
- (iii) List all the Books available in library.
- (iv) List all the Books whose author name's first character is 's'.
- (v) List all the students admitted for MCA course.

### **Unit-II**

13. State BCNF. How does it differ from 3NF ?

14. Explain Conflict Serializable Schedules.

### **Unit-III**

15. Explain the time stamp based protocol for concurrency control in a DBMS.

16. What is Deadlock ? When does it occur ? How is it detected in the database system ? How can it be avoided ? Discuss in detail.