

Lamrin Tech Skills University Punjab
University School of Engineering and Technology
End Term Examination Jan 2025

Programme: B.Tech (CSE)

Session: 2024-25

Course Code: UGCS-201

Course Title: Relational Database Management System & NoSQL

Semester: Third

Max. Marks: 50

Time: 3 Hrs.

Roll No.: _____

INSTRUCTIONS TO CANDIDATES

1. SECTION–A is Compulsory carrying one mark each.
2. SECTION–B: You have to attempt 4 questions carrying 5 marks each.
3. SECTION–C: You have to attempt 2 questions each carrying 10 marks each.

Section A

- I) What is the difference between primary and foreign keys?
- II) Explain Natural Join With Example.
- III) Define cascading rollback?
- IV) What are the key features of NoSQL databases?
- V) Differentiate between where clause and group by clause.
- VI) Differentiate between OLAP and OLTP.
- VII) Define atomicity.
- VIII) What is a composite key?
- IX) Explain the purpose of normalization.
- X) What is phantom read problem?

SECTION B

Q2 Discuss in detail timestamp based concurrency control techniques.

Q3 Given a relation (P, Q, R, S, T, U, V, W, X, Y) and Functional Dependency set $FD = \{PQ \rightarrow R, PS \rightarrow VW, QS \rightarrow TU, P$

Q4 Write SQL statements for following: ■ Student(Enno, name, courseId, emailId, cellno) ■ Course(courseId, course_n

Q6 What is database Recovery? Explain Shadow paging in detail.

Q7 What is CAP theorem? How is it applicable to NoSQL systems? List the different kinds of NoSQL data stores?

SECTION C

Q8 Describe briefly the database design with the ER Model for Hospital Management System. Mention its cardinality and

Q9 How to perform rollback, commit, check pointing operations on transactions? List out the two-phase locking? Explain v