**Roll No…………….. Total No. of Pages:……**

**ST-3 (SET-IV)**

**4th SEMESTER 2023-24**

**22CS007- Database Management System**

**Time allowed: 90 Minutes Max. Marks: 40**

**General Instructions:**

* **Follow the instructions given in each section.**
* **Make sure that you attempt the questions in order.**

**SECTION-A (10\*1 mark=10 marks)**

***(All questions are compulsory)***

1. Which of the following is true about a "REPEAT" loop in programming?
   1. **The loop body is executed at least once, even if the condition is false initially**
   2. The loop body is executed only if the condition is true
   3. The loop body is executed until the condition becomes true
   4. The loop body is executed a fixed number of times
2. In SQL, the "HAVING" clause is used to:
   1. **Filter rows based on a condition in a SELECT statement**
   2. Specify the order of result rows
   3. Join multiple tables based on a common column
   4. Define constraints on table columns
3. Which of the following is true about BEFORE triggers?
   1. They are fired after the triggering event occurs
   2. **They are fired before the triggering event occurs**
   3. They are fired instead of the triggering event
   4. They are not supported in DBMS
4. Which keyword is used to define a procedure in SQL?
   1. **PROCEDURE**
   2. FUNCTION
   3. METHOD
   4. DECLARE
5. Which recovery technique requires that the transaction redo all its changes during the recovery process?
   1. Undo logging
   2. **Redo logging**
   3. Deferred update
   4. Shadow paging
6. Which of the following is a disadvantage of the shadow paging recovery technique?
   1. **Increased disk space requirement**
   2. Slower recovery process
   3. Limited support for concurrent transactions
   4. Difficulty in implementing locking mechanisms
7. Which of the following is a property of a Serializable schedule?
   1. Recoverability
   2. **Cascadeless**
   3. Starvation-free
   4. Deadlock-free
8. Which of the following is an example of a schedule that is not recoverable?
   1. S: r1(A), w1(B), r2(A), w2(B)
   2. **S: r1(A), r2(A), w2(B), w1(B)**
   3. S: r1(A), w1(B), w2(A), r2(B)
   4. S: r1(A), w1(B), r2(A), r2(B)
9. Which of the following recovery techniques ensures that all the changes made by a transaction are either committed or rolled back?
   1. Undo logging
   2. Redo logging
   3. Deferred update
   4. **Immediate update**
10. Which recovery technique uses a log file to record all the changes made to the database?
    1. Checkpointing
    2. Shadow paging
    3. Deferred update
    4. **Log-based recovery**

**SECTION-B (5\*2 mark=10 marks)**

***(All questions are compulsory)***

**SECTION-C(Coding Question) (4x5 marks=20 marks)**