National University of Computer and Emerging Sciences, Lahore Campus

	Course:	Advance Database Concepts	Course Code:	CS451
	Program:	BS(Computer Science)	Semester:	Spring 2017
	Out Date:	24-Jan-2017	Total Marks:	
	Due Date:	30-Jan-2017 (start of class)	Weight:	
	Section	A	Page(s):	1
	Assignment:	1 (Transactions)		

Instruction/Notes:

Q1: Consider schedules given below. Draw the serializability (precedence) graphs for schedules, and state whether each schedule is serializable or not. If a schedule is serializable, write down all possible equivalent serial schedule(s).

    a) $r_3(X); r_2(X); w_2(X); r_1(X); w_1(X)$.
    b) $r_1(X); r_2(Z); r_1(X); r_3(X); r_3(Y); w_1(X); w_3(Y); r_2(Y); w_2(Z); w_2(Y)$.
    c) $r_1(A); r_3(A); w_1(A); r_2(A); w_3(A); w_2(A)$.
    d) $r_1(X); r_2(Z); r_1(Z); r_3(X); r_2(Y); w_1(X); w_2(Z); r_3(Y); w_3(Y); w_2(Y)$.

Q2: Consider schedules below. Determine whether each schedule is strict, cascadeless, recoverable, or nonrecoverable. (Determine the strictest recoverability condition that each schedule satisfies.)

    a) $r_1(X); w_3(X); c_3; w_1(Y); c_1; r_2(Y); w_2(Z); c_2$.
    b) $r_1(X); r_2(Z); r_3(X); r_1(Z); r_2(Y); r_3(Y); w_1(X); c_1; w_2(Z); w_3(Y); w_2(Y); c_3; c_2$.
    c) $r_1(X); w_1(X); r_1(Y); w_1(Y); r_2(X); w_2(X); c_2; c_1$.

Q3: Suppose there is a simple operating system that gets operations in form of records in a table. According to requirement, table can have maximum of five entries in it, if an operation comes and there are already 5 operations in the table, the insertion must be denied. create this table, and write SQL statement of insertion in this table in the form of **transaction.** You need to submit the snap shot of complete SQL script written in SQL. That complete script should run, if running the script shows error, no marks will be awarded. Script must have:

    a) SQL script to create this table
    b) SQL script of transaction to carry out the specified task