SHRI RAMSWAROOP MEMORIAL UNIVERSITY

End Semester Examination (2021-22)-Odd Semester

MCA – I Year (I Sem)	
Course Name: Database Management Systems	**Code: MCS 1007**
Time: 02 Hours	**Max Marks: 60**

University Roll No.															
(To be filled by the Student)															

Note: Please read instructions carefully:

a) *The question paper has 03 sections and it is compulsory to attempt all sections.*

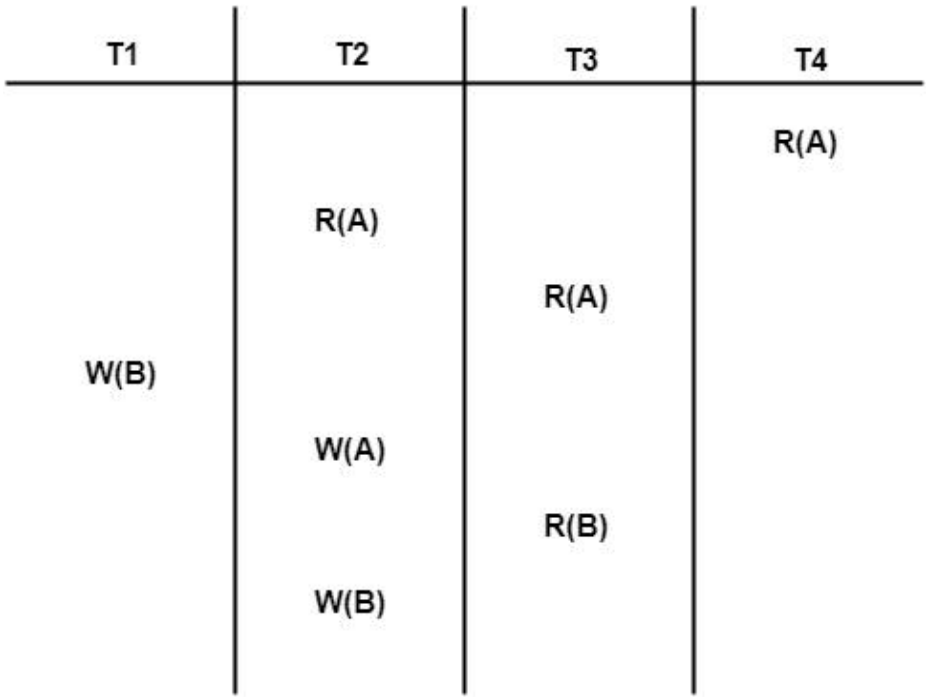
b) *All questions of Section A are compulsory; questions in Section B and C contain choice.*

Section A: Very Short Answer type Questions **Attempt all the questions.**		**BL**	**CLO**	**Marks (10)**
1.	Illustrate recovery management component.	BL2	CLO5	02
2.	What is multiple granularity?	BL1	CLO5	02
3.	Describe functional dependencies.	BL2	CLO5	02
4.	Compare between DDL and DML.	BL2	CLO1	02
5.	Define SQL literals.	BL1	CLO1	02
Section B: Short Answer Type Questions **Attempt any 03 out of 06 questions.**		**BL**	**CLO**	**Marks (30)**
1.	Demonstrate data independence with suitable diagram.	BL3	CLO1	10
2.	Illustrate the various types of attributes with examples.	BL4	CLO2	10
3.	Explain strict 2 phase locking protocol.	BL2	CLO5	10
4.	Describe Aggregate functions.	BL2	CLO3	10
5.	Construct a state diagram and discuss the typical states that a transaction goes through during execution.	BL3	CLO4	10

6.	From the following table, create a view for those salespersons belong to the city 'New York'. Sample table: salesman			BL3 / CLO3 / 10

salesman_id	name	city	commission
5001	James Hoog	New York	0.15
5002	Nail Knite	Paris	0.13
5005	Pit Alex	London	0.11
5006	Mc Lyon	Paris	0.14
5007	Paul Adam	Rome	0.13
5003	Lauson Hen	San Jose	0.12

Section C: Long Answer Type Questions/Case Study **Attempt any 01 out of 03 questions.**	**BL**	**CLO**	**Marks (20)**
1. Construct a generalization–specialization hierarchy for a motor-vehicle sales company. The company sells motorcycles, passenger cars, vans, and buses. Justify your placement of attributes at each level of the hierarchy. Explain why they should not be placed at a higher or lower level. Illustrate keys , weak and strong entity sets, partial and total participation , generalization in reference to ER Modeling.	BL4	CLO2	20
2. Compare and examine various serializability techniques and recovery methods with respect to transactions. Examine whether the given schedule S is conflict serializable or not.	BL4	CLO4	20



3.	Demonstrate first, second, and third normal forms when only primary keys are considered. How do the general definitions of 2NF and 3NF (consider all keys of a relation) differ from those that consider only primary keys? The following functional dependencies hold true for the relational scheme R (W , X , Y , Z) – $X \rightarrow W$ $WZ \rightarrow XY$ $Y \rightarrow WXZ$ Identify the irreducible equivalent for this set of functional dependencies.	BL3	CLO1	20
