



Name: Database Management Systems (DBMS)

Duration: **1:30Hrs**

INSTRUCTIONS:

1. Please read all the questions carefully and there are no alternative options.
2. **The answer to the attempted question should be concluded by appropriate steps.** Merely answering the question will not entertain.
3. Do not do any inappropriate activity as you are being recorded and please sit properly in front of your camera. For more information, please read all the guidelines given by the UG Exams Coordinator.
4. Submit a single PDF file containing all the answers to your attempted questions in the Google Classroom.
5. The naming conventions of the PDF file should be as follows: S2020xxxxx_SET_B_1.pdf for SET-A-1.
6. The Exam's time duration is 1:30 Hrs (**45 minutes for quiz+45 minutes for theory**). However, an additional 10 minutes will be given to scan and upload the answer sheets.
7. Note that maximum marks for written exam is 30 marks and 10 marks for viva

Not following instructions leads to heavy penalty

SET-B-1

Q.1 Consider the following set of Tables

Students (S)

Student_ID(sid)	Student_name	Age
S1	A	18
S2	B	16
S3	A	17
S4	C	20

Course(C)

Course_ID(cid)	Instructor (inst)
C1	Dr. Annushree
C2	Dr. Annushree
C3	Dr. Odelu

Enroll (E)

Student_ID(sid)	Course_ID(cid)
S1	C1
S1	C2
S1	C3
S2	C1
S3	C3
S3	C2
S3	C1
S4	C2
S4	C1

1. On the basis of the above tables, evaluate the following queries (using Relational Algebra) step by step. [12-MARKS]

$$1. \Pi_{Student_name, Age} (S \bowtie (E \bowtie C))$$

$$2. \Pi_{Student_name, Age} (S \bowtie (E / C))$$

$$3. \Pi_{Student_name, Age} (S - (E / C))$$

2. Write a query to retrieve Sid's enrolled only two courses [2-MARKS]

3. Write a query to retrieve the sid whose age is greater than the age of all other students. [1-MARKS]