

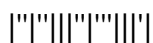
II B. Tech II Semester Regular Examinations, August/September- 2021
DATABASE MANAGEMENT SYSTEMS
 (Common to CSE & IT)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions each Question from each unit
 All Questions carry **Equal** Marks

- ~~~~~
- 1 a) Distinguish between database systems and file systems. [8M]
 b) Discuss about the client server architecture of the database. [7M]
- Or
- 2 a) Define DBMS. Explain database users in detail. [8M]
 b) What are advantages of DBMS? Explain. [7M]
- 3 a) Describe creating and modifying relations using SQL. Give examples for each. [8M]
 b) Explain about integrity constraints over relations. [7M]
- Or
- 4 Consider the following insurance database, where the primary keys are underlined. [15M]
 Construct the following SQL queries for this relational database.
 person (driver-id#, name, address)
 car (license, model, year)
 accident (report-number, date, location)
 owns (driver-id#, license)
 participated (driver-id, car, report-number, damage-amount)
 a. Find the total number of people who owned cars that were involved in accidents in 1989.
 b. Find the number of accidents in which the cars belonging to "John Smith" were involved.
 c. Add a new accident to the database; assume any values for required attributes.
 d. Delete the Mazda belonging to "John Smith".
 e. Update the damage amount for the car with license number "AABB2000" in the accident with report number "AR2197" to \$3000.
- 5 Consider a database used to record the marks that students get in different exams of different course offerings. [15M]
 a. Construct an E-R diagram that models exams as entities, and uses a ternary relationship, for the above database.
 b. Construct an alternative E-R diagram that uses only a binary relationship between students and course-offerings. Make sure that only one relationship exists between a particular student and course-offering pair, yet you can represent the marks that a student gets in different exams of a course offering.
- Or
- 6 a) Explain about relationship sets in ER model with examples. [8M]
 b) Discuss about updates on views. What is the need to restrict view updates? [7M]



- 7 a) Consider the relation R on attributes (ABCDE) with functional dependencies: [8M]
 $AB \rightarrow CDE, AC \rightarrow BDF, B \rightarrow C, C \rightarrow B, C \rightarrow D, B \rightarrow E$
i) Determine a Key for relation R
ii) Find 3NF decomposition for R using normalization process
- b) Give a set of FDs for the relation schema R(A,B,C,D) with primary key AB [7M]
under which R is in 1NF but not in 2NF.
- Or
- 8 a) Why is a relation that is in 3NF generally considered good? Explain. [8M]
b) Discuss about 4NF with suitable example. [7M]
- 9 Explain the following:
- a) Conflict serializability [5M]
b) B+ tree insertion algorithm [5M]
c) Comparison of file organizations [5M]
- Or
- 10 Explain the following:
- a) Concurrent executions [5M]
b) Primary and secondary indexes [5M]
c) Shadow-copy technique for atomicity and durability [5M]

