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Question Paper Code :

**ANIL NEERUKONDA INSTITUTE OF TECHNOLOGY & SCIENCES
(AUTONOMOUS)**

M.E/M.Tech I-Semester Regular Examinations, November 2015

Advances in Database Management Systems

(Computer Science & Technology)

Date:

Time: 3 hours

Max Marks: 60

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

Unit-1

- 1). A) i) List two reasons why null values might be introduced into databases. (2M)
ii) Define primary key and foreign key. (2M)
- B) Explain in detail about Triggers. and solve the below problem. (8M)
A Municipality Corporation of a Metropolitan City has started a 3 benefit scheme in such a way that the senior citizens whose age is above 60 years are added with these three benefits. A citizen relation will have the following attributes (**SSNO, Name, Address, Age, Benefit1, Benefit2, Benefit3**). initially all the three attributes Benefit1, Benefit2, Benefit3 will be null for all the citizens. But now they should be updated to only 'Yes' (no other value is accepted) if a citizen is a senior citizen. Create a trigger in such a way that, updating to the above mentioned three attributes will be done only when the person is a Senior Citizen (this should be an auto update of all the tuples with 'YES' to all the 3 attributes with senior citizen). (OR)
- 2). A) i). Discuss the differences in meaning between the terms relation and relation schema. (2M)
ii). List out two advantages and two disadvantages of Database system. List four significant differences between a file-processing system and a DBMS. (2M)
- (B) Explain Entity relationship model in detail with examples. (Draw the model in a neat sketch) (8M)

Unit-2

- 3). A) i) Brief about functional dependency. (2M)
ii) Brief about cursors. (2M)
- B). Explain about Embedded SQL and Dynamic SQL with examples each. (8M)
(OR)
- 4). A) i) Give few points about stored procedures (2M)
ii) Write a small code for JDBC. (2M)

- B). What do you mean by decomposition and explain in detail about First and Second Normal forms with clear examples (8M)

Unit-3

- 5). A). i) Let r and s be relations with no indices, and assume that the relations are not sorted. Assuming infinite memory, what is the lowest-cost way (in terms of I/O operations) to compute $r * s$? What is the amount of memory required for this algorithm? (2M)
ii). What is meant by Query Processing and Query Optimization? Brief out their usefulness (2M)
B) Explain 3 join operations in query processing with their algorithms (8M)
(OR)
- 6). A). i) Discuss about parametric query optimization? (2M)
ii). Brief out about the aggregation operations. (2M)
B) Explain in detail about materialized views. (8M)

Unit-4

- 7). A). i) What is meant by lock de-escalation, and under what conditions is it required? Why is it not required if the unit of data shipping is an item? (2M)
ii) Is it wise to allow a user process to access the shared memory area of a database system? Justify your answer. (2M)
B). Explain about centralized and client-Server Architecture (8M)
(OR)
- 8). A). i) What are called decision-support queries (2M)
ii) What is called data-Parallelism? (2M)
B) Explain about distributed data storage (8M)

Unit-5

- 9). A). i) Suppose that there is a database system that never fails. Is a recovery manager required for this system? (2M)
ii) Since every conflict-serializable schedule is view serializable, why do we emphasize conflict serializability rather than view serializability? (2M)
B) Explain in detail about view serialisable and conflict serialisable in detail. (8M)
(OR)
- 10). A). i). Brief about concurrency control (2M)
ii). Database-system implementers have paid much more attention to the ACID properties than have file-system implementers. Why might this be the case? (2M)
B). Explain how Dead locks are handled during concurrency control? (8M)