

2014

Time: 3 hours

Full Marks: 70

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer from **all** the Groups as directed.

Group – A**(Compulsory)**

1. Correct all the statement as True or False: 1 x 15 = 15
- a) Dynamic SQL is more efficient than static SQL.
 - b) Privileges are granted to users at the discretion of other users.
 - c) When an organization has security officers the security aspects are handled by them and not by the DBA.
 - d) The REVOKE Command is used to take away a privilege that was granted.
 - e) Column constraints are specific to a column in a base table.
 - f) When the table is dropped using the drop table statement, the constraints associated with the table are also dropped.
 - g) The primary key value of each row in a table need not be unique.

- h) A transaction that is either committed or aborted is said to be terminated.
- i) The scheduler is referred to as the lock manager if the concurrency control protocol is locking based.
- j) A backup is a copy of the database that includes important parts of database such as the control file and data files.
- k) A database directory is used to keep track of which database items are in the buffers.
- l) Shadow paging is a technique where transaction logs are not required.
- m) Data normalization is a corner stone of the relational theory.
- n) Enhanced Entity Relationship is also known as EER Model.
- o) The DML enabled the manipulation of the database contents.

Group – B

(Short-answer Type Questions)

Answer any **five** questions of the following: 4x5=20

2. Explain the different types of views of a database.
3. What is relational database? Explain the different types of keys for creating a relational database.
4. What is Integrity Constraints? Explain the types of constraints.
5. What do you mean by Specialization? Explain it with example.
6. Describe super class and sub class of Entity types? How they are related with each other?
7. Differentiate between SDLC and DDLC?
8. What is Sequential File Organization? Explain its advantages and disadvantages.

Group – C

(Long-answer Type Questions)

Answer any **five** questions of the following:

7x5=35

9. What is a Data Model? Differentiate between Network and Hierarchical Data Model with their advantages and disadvantages.
10. What is Normalization? Explain BCNF.
11. Draw an ER diagram for the database of a Hospital with a set of Patients and a set of Medical Doctors. With each Patient a log of the various tests conducted is also associated.
12. What is Relational Algebra? Explain its uses. Which are the relational algebraic operations derived from set theory.
13. Write notes on the following:
 - a) Relational Calculus
 - b) OLAP
 - c) Data Mining
 - d) AVG()
14. What is Triggers? Explain its types. How we create Triggers? Explain it with example.
15. Create table in SQL for a Library in your college with the Title of the Book, Author Name, Publisher, Price, Year of Publication and Book Category and perform the Query given below:
 - a) Get the title of all the books whose price is greater than 22 and year of publication is 2013.
 - b) Get the names of all the books whose price is greater than the maximum of category averages.
 - c) Find all the books which are not in the fiction category.

- d) Show the details of book, whose publishers name starts with 'T' and ends with 'H'.
- e) Show all the books whose price is in the range of 250 and 550 both inclusive.
- f) Show all the book list who are belonging the category in (Fiction and Business class and published in the year before 2000.)

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