QUESTION 2013

Group – A
(Multiple Choice Type Questions)

1. Choose the correct alternatives for any ten of the following:

i) Which of the following keyword is used in SQL to eliminate duplicate rows from the query result?
a) NO DUPLICATE ✓b) DISTINCT c) UNIQUE d) none of these

ii) Relational algebra is a ..... language.
a) non-procedural ✓b) procedural c) programming d) none of these

iii) The ..... command returns the number of rows deleted.
a) Truncate ✓b) Delete c) Drop d) None of these

iv) Which of the following clauses is used to enforce a condition on a SQL statement containing. "group by" caluse?
a) Where ✓b) Having c) Order by d) None of these

v) Generalization is a ..... approach.
✓a) bottom up b) top down c) both (a) and (b) d) None of these

vi) Functional dependency is the dependency between
a) Tuples ✓b) Attributes c) Values d) None of these

vii) COMMIT is a ..... Statement.
✓a) TCL b) DCL c) DML d) DQL

viii) Which of the following is not an aggregate function?
a) SUM b) MIN c) MAX ✓d) DISTINCT

ix) Files of unordered records are called
✓a) heap files b) stored files c) hash files d) None of these

x) The main goal of indexing is to
✓a) search an item faster from a table b) insert an item faster into a table
c) delete an item faster from a table d) none of these

xi) The degree of a relationship describes
a) the number of attributes attached to a relation
✓b) the number of entities attached to a relation
c) the number of relations used to connect the entities
d) None of these

xii) The full from of CODASYL is

a) Correlated Data System Language
b) Conference on Data System Language
c) Cohesion on Data System Language
✓d) None of these

Group – B
(Short Answer Type Questions)

2. Differentiate between the following.

a) Delete and truncate operations.

b) Referential integrity and entity integrity.

a) See Topic: SQL, Short Answer Type Question No. 5(a).

b) See Topic: SQL, Short Answer Type Question No. 5(b).

3. $R(A,B,C,D,E)$ and $A \rightarrow BC, B \rightarrow E, CE \rightarrow D$ in R. Find the candidate key for R.

See Topic: FUNCTIONAL DEPENDENCIES AND NORMALIZATION, Short Answer Type Question No. 13.

4. What do you mean by degree of a relationship? What is cardinality of a relationship? What is a ternary relationship?

See Topic: ENTITY-RELATIONSHIP MODEL, Short Answer Type Question No. 1(a), (b) & (c).

5. Explain the disadvantages of file oriented approach.

See Topic: STORAGE STRATEGIES, Short Answer Type Question No. 3.

6. "Minimal super key is candidate key". With a suitable example, justify the statement.

See Topic: RELATIONAL MODEL, Short Answer Type Question No. 7.

Group – C
(Long Answer Type Questions)

7. What do you mean by fully functional dependency? A relation R (A, B, C) having FDs – A →B, A → C, C → B. Is the relation in 2NF? Can it be decomposed to 3NF? Justify your answer.

See Topic: FUNCTIONAL DEPENDENCIES AND NORMALIZATION, Long Answer Type Question No. 8.

8. Consider a relation–

Bank (Customer_name,account_no, account_type, balance, branch)

Solve the following queries using SQL, Relational Algebra and Tuple Relational Calculus.

i) Retrieve total balance amount for individual branch.

ii) Retrieve the name of the customers who have an account in "Dunlop" branch and balance less than Rs. 10,000.

iii) List the information of all customers of savings branch.

iv) Who have the minimum balance among all customers?

v) Display the balance of those customers whose balance starts with the letter 'A'.

See Topic: RELATIONAL MODEL, Long Answer Type Question No. 4.

9. Consider the universal relation:

$R = \{A, B, C, D, E, F, G, H, I, J\}$ and the set of functional dependencies:

$AB \rightarrow C$

$A \rightarrow DE$

$B \rightarrow F$

$F \rightarrow GH$

$D \rightarrow IJ$

For the above relation R and functional dependencies, consider the decomposition $D = \{R1, R2, R3\}$ where

$R1 = \{A, B, C, D, E\}$

$R2 = \{B, F, G, H\}$

$R3 = \{D, I, J\}$

Find out whether this decomposition is lossless or lossy.

See Topic: FUNCTIONAL DEPENDENCIES AND NORMALIZATION, Long Answer Type Question No. 9.

10. Differentiate between various levels of data abstraction. What is data independence? Explain the difference between physical and logical data independence. List any two significant differences between a file processing system and a DBMS.

2nd part: See Topic: INTRODUCTION, Short Answer Type Question No. 2 (a).

3rd part: See Topic: INTRODUCTION, Short Answer Type Question No. 1 (b).

1st & Last part: See Topic: INTRODUCTION, Long Answer Type Question No. 3.

11. Difference between the following:

Define the five basic operators of relational algebra with an example each.

a) Theta Join

b) Equi Join

c) Natural Join

d) Outer Join

a) See Topic: RELATIONAL MODEL, Long Answer Type Question No. 9(e).

b) See Topic: RELATIONAL MODEL, Long Answer Type Question No. 9(f).

c) See Topic: RELATIONAL MODEL, Long Answer Type Question No. 9(g).

d) See Topic: RELATIONAL MODEL, Long Answer Type Question No. 9(d).