

2014

Time : 3 hours

Full Marks : 80

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 both the Groups as directed.

Group – A

(Objective-type Questions)

Answer all questions.

1. Choose the correct answer of the following : $2 \times 10 = 20$

(a) The information about data in a database is called _____.

(i) Tera data

(ii) Metadata

(iii) Hyper data

(iv) None of these

(b) The person who has the central control over data and application programs is _____.

- (i) DBA
- (ii) System Analysis
- (iii) Database Designer
- (iv) None of these

(c) The relational model includes :

- (i) Manipulative components
- (ii) Integrity constraints
- (iii) Structural components
- (iv) All of the above

(d) Which of the following data structures is used in relational model ?

- (i) Table
- (ii) Tree
- (iii) Node
- (iv) None of these

(e) Which of the following is the operation developed specifically for the relational databases ?

- (i) Union

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(2)

Contd.

(ii) Cartesian product

(iii) Division

(iv) Difference

(f) Which of the following aggregate functions is used for counting tuples or values in a relation ?

(i) Avg()

(ii) Count()

(iii) Max()

(iv) Min()

(g) The operation that is used to retrieve those tuples present in one relation, and not present in another relation is _____.

(i) UNION

(ii) INTERSECT

(iii) MINUS

(iv) DIFFERENCE

(h) Which of these is the correct command for inserting values in the **Employee** relation ?

(i) Insert values ('Ravi', 2000) into Employee

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(3)

(Turn over)

- (ii) Insert ('Ravi', 2000) into Employee
 - (iii) Insert into Employee values ('Ravi', 2000)
 - (iv) None of these
- (i) The command that can be used to make changes in the name of publishers in a relation PUBLISHER is _____.
- (i) UPDATE
 - (ii) ALTER
 - (iii) MODIFY
 - (iv) None of these
- (i) Which of these operators selects values that match any value in a given list of values ?
- (i) BETWEEN
 - (ii) LINK
 - (iii) IN
 - (iv) None of these

Group - B

(Long-answer Type Questions)

Answer any four questions of the following.

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(4)

Contd.

- 2. What are the different types of database users who interact with the database system ? Explain each of them in brief. 15
- 3. Write short notes on data definition language and data manipulation language. 15
- 4. (a) What is an E-R mode ? What are its advantages ? 7
- (b) Explain the various types of attributes. What are the various situations in which an attribute can use a null value ? 8
- 5. (a) What do you understand by the term relation ? 7
- (b) Explain the characteristics of relations ? 8
- 6. (a) Define the term data integrity and explain its type. 7
- (b) Explain, in brief, the various update operations that can be performed on a relation. 8
- 7. (a) What is SQL ? What are the two major categories of SQL commands ? Explain them. 7

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(5)

(Turn over)

- (b) What is data type ? What are the various data types supported by standard SQL ? 8
8. Explain various set operations available in SQL with examples. 15
9. What do you mean by decomposition of a relation ? Why is it required ? Explain by giving an example. 15
10. (a) What is functional dependency ? Give examples. 7
- (b) What is transitive dependency ? Explain the normal form based on the concept of transitive dependency. 8

