2012

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 : 2×10 = 20

1. Choose the correct answer of the following :
(a) Which of the following is a database element ?
   (i) Data
   (ii) Relationship
   (iii) Constraints and Schema
   (iv) All of the above

CX – 11/3             (Turn over)
(b) A lowest level data model is:
   (i) External data model
   (ii) Physical data model
   (iii) Logical data model
   (iv) None of the above

(c) Data about data is called ____________
   (i) Schema
   (ii) Metadata
   (iii) Data dictionary
   (iv) Index

(d) To retrieve a specific tuples from a relation
    we use ____________ operation.
   (i) Select
   (ii) Intersect
   (iii) Minus
   (iv) Project

(e) Key which possess the property of Unique +
    Not Null:
   (i) Super Key
(ii) Candidate key
(iii) Primary key
(iv) Secondary key

(f) A referential integrity constraint in a relational database is specified using __________ key.

(i) Foreign
(ii) Primary
(iii) Candidate
(iv) None of the above

(g) Which SQL statement is used to update data in a database?

(i) Modify
(ii) Save
(iii) Save as
(iv) Update

(h) Which of the following is a DDL command?

(i) Create
(ii) Truncate

CX – 11/3 (3) (Turn over)
(iii) Rename
(iv) All of the above

(i) The three schema architecture consist of:
   (i) Internal Schema
   (ii) External Schema
   (iii) System Schema
   (iv) Conceptual Schema

(j) If a relation does not have a join dependency, the relation is:
   (i) 3NF
   (ii) BCNF
   (iii) 4NF
   (iv) 5NF

Group – B

(Long-answer Type Questions)

Answer any four questions:

2. (a) What is database? Discuss its main features and explain the importance of each feature.

CX – 11/3 (4) Contd.
(b) Describe the role of a database administrator.

3. (a) What are the different operations used in relational algebra? Explain any one of them with suitable example.

(b) Explain the use of UNION, INTERSECT and EXCEPT in SQL query.

4. (a) Explain Entity integrity, referential integrity and domain constraints with suitable example.

(b) Explain E-R data modeling by giving suitable example.

5. Develop an Entity-Relationship diagram for Indian movies. It should include where it was shot, details of the actors, directors, producers, the movie languages and so on. Make your own assumptions.

6. How will you classify the data model based on the levels of usage? Explain them in brief.

CX - 11/3 (5) (Turn over)
7. (a) What is normalization? Explain its role in database design.  
(b) Explain 1NF, 2NF and 3NF each with suitable example.  

8. (a) What is client/server concept? Give a schematic view of two-tier client/server system. 
(b) Explain the following client/server systems with suitable example:  
   (i) Email system  
   (ii) Chat application  

9. (a) How will you map a conceptual data model into a relational data model? Illustrate it with suitable example.  
(b) Explain multivalued dependency, transitive dependency and partial dependency with suitable examples.  

CX – 11/3 (800)      6)    BCA(II)/14/12