

**2020**

*Time : 3 hours*

*Full Marks : 80*

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

*The questions are of equal value.*

*Answer **five** questions in which*

*Q. No. 1 is compulsory.*

1. Choose the correct alternative of the following :

(a) Which of the following is a database element ?

(i) Data

(ii) Relationship

(iii) Constraints

(iv) All of these

(b) What is the smallest unit of data in the relational model ?

(i) Field

(ii) Data Value

(iii) Data Type

(iv) None of these

- (c) Which of the following is a valid SQL data type ?
- (i) Character      (ii) Numeric  
(iii) Float      (iv) None of these
- (d) Which of the following is not a DCL statement ?
- (i) Grant      (ii) Revoke  
(iii) Rollback      (iv) Alter
- (e) In an E-R diagram which is used for representing an entity ?
- (i) Square      (ii) Rectangle  
(iii) Diamond Shape      (iv) Ellipse
- (f) The type of data structure that is used in a relational model is :
- (i) Table      (ii) Tree  
(iii) Graph      (iv) None of these
- (g) The information about data in a database is called :
- (i) Tera data      (ii) Meta data  
(iii) Hyper data      (iv) None of these

(h) Building a data model requires answering a question about :

- (i) Entities  
(ii) Relationship  
(iii) Attributes  
(iv) All of these

2. What is File Processing System ? Discuss disadvantages of file processing system over database system.
3. What is Deadlock ? How are the deadlocks handled ? Describe about deadlock detection and recovery.
4. What are the Components of Database Management System that are responsible for Transaction Management and Concurrency Control ?
5. What do you mean by SQL ? Explain the salient features of SQL.

6. What are the different database models ? Explain with advantages and disadvantages.

7. What is an E-R modeling ? What are the components of an E-R model ? Explain.

8. What is Stack ? Describe the operation performed on stack data structure.

9. Explain the following SQL command with example :

- (a) SELECT
- (b) DROP TABLE
- (c) ALTER TABLE

10. Write short notes on any two of the following :

- (a) Management Information System (MIS)
- (b) Data and Information
- (c) Data Action Diagram (DAD)
- (d) Design of Conceptual Data Model
- (e) Relational Algebra

