

2015

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 any five questions.*

1. (a) What are the responsibilities of DBA ?

Explain.

(b) Write difference between the following :

(i) Logical and physical data independence

(ii) Database and physical data independence

2. Define and discuss main the constraints on the  
following by giving example :

(a) Specialization

- (b) (i) What is the difference between WHERE and HAVING clause ?
- (ii) What is the difference between UPDATE and ALTER command in SQL ?

8. Briefly describe about security and integrity of database systems.



2016

*Stalin*  
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 any five questions.*

1. (a) Explain the three different groups of data models with suitable examples. 10  
(b) Explain five duties of Database Administrator. 6
2. What is meant by Entity Relationship Model ? Explain its various components. Draw a ER model to represent the operations of a Bank. 16

3. (a) Distinguish between strong entity and weak entity set with an example. 6
- (b) Explain the terms primary key, candidate key and foreign key. Give an example for each. 10
4. (a) Differentiate between Generalization and Specialization. 6
- (b) Explain the concepts of relational data model. Also discuss its advantages and disadvantages. 10
5. What is normalization ? Explain various types of normalizations with the help of suitable examples. 16
6. (a) What are views ? Explain how views are different from tables. 6
- (b) Discuss the various pitfalls in a relational database design using a sample database. 10

7. (a) Explain about the following clauses with example queries : 8

- (i) Group by
- (ii) Order by
- (iii) Aggregation functions

(b) What is a view ? How can it be created ? Explain with an example. 8

8. (a) Explain the basic structure of an SQL. 8

(b) What is a join ? Discuss different types of joins. 8

9. Write short notes on the following :  $6+6+4 = 16$

- (a) DDL
- (b) Statistical Databases
- (c) Database Schema

Madhava

2017

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*Answer any five questions.*

1. Define Database and Database Management Systems. What are the main advantages of DBMS ? Also discuss the limitations of DBMS.

16

2. Differentiate between Hierarchical, network and relational database models with their relative merits and demerits in detail.

16

3. (a) What is data independence ? Discuss three tier schema architecture of data independence.

8

( Turn over )

- (b) Draw an E-R diagram for a hospital with a set of patients and a set of medical doctors, with each patient a of the various conducted tests is also associated. 8
4. (a) Explain the following terms : 8  
(i) Entity and entity set  
(ii) Attribute and attribute sets  
(iii) Relationship and relationship sets
- (b) Define generalization and aggregation. Demonstrate generalization and aggregation using E-R diagram. 8
5. Discuss the following concepts of Normalization with examples : 16  
(a) Need for Normalization  
(b) First Normal Form  
(c) Second Normal Form
6. (a) Explain the functional dependency with multivalued dependencies with example. 8  
(b) What is meant by multivalued dependency ? Explain with example. 8

- (a) Differentiate between Data Definition Language and Data Manipulation Language. 8
- (b) How many clauses are there in the basic structure of an SQL ? Explain. 8
- (a) Briefly describe about security and integrity of database systems. 8
- (b) Explain the integrity constraints with an example each :  
Not Null, Unique, Primary Key 8



2018

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Answer any five questions.

**(DBMS)**

1. (a) Define DBMS. Discuss about the purpose of database system. 8
- (b) What is Database Administrator ? Discuss the functions of DBA. 8
2. (a) Discuss about Relational Data Model and Hierarchical Data Model. 8
- (b) Define keys in DBMS. What are the types of key used in the database management system ? 8

( Turn over )

3. Define Entity-Relationship Diagram. Explain Generalization, Specialization and Aggregation by using example. 16
4. (a) Explain the following : 8  
(i) Key constraints  
(ii) Integrity constraints  
(b) Explain details about DBMS advantages over traditional file system 8
5. What do you mean by Normalization ? Discuss the normal forms used in DBMS. 16
6. What do you understand by Data Independence ? Discuss the three tier schema architecture. 16
7. Write short notes on any two of the following :  
16  
(a) DDL  
(b) DML  
(c) DCL  
(d) TCL
8. (a) What do you understand by Functional Dependency ? 6

(b) Describe different type of JOINS in SQL with appropriate example. 10

(a) Explain the three layer architecture of DBMS. 8

(b) Discuss the following SQL commands by using example : 8

(i) SELECT

(ii) INSERT

(iii) UPDATE

(iv) DELETE

10. Discuss about Database Security. How statistical database ensures security for DBMS ? 16



2019

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*Answer any five questions.*

1. What is the purpose of normalisation in DBMS.  
Enlist the advantages of normalising database.
  2. Define DDL and DML. Enlist some commands of DDL and DML.
  3. (a) Define sub-query  
(b) Enlist the cursor types
- What is data abstraction in DBMS. What are the three of data abstraction.

What is an Entity, Entity type and Entity set.

6. (a) Describe the types of keys in DBMS.  
(b) Differentiate between super key and candidate key.
7. Define join and enlist its types.
8. (a) What is RDBMS ?  
(b) What is multivalued dependency ?
9. What is constraints ? Explain key and integrity constraints.
10. Explain E-R diagram. Draw an ER diagram for Hospital Management System.

