

17332

21819

3 Hours / 100 Marks

Seat No.

--	--	--	--	--	--	--	--	--

- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Attempt any SIX of the following :

12

- (a) List types of files in the computer system with example.
- (b) Draw the neat labelled diagram of three-tier client/server architecture.
- (c) List the functions of database administrator (four points).
- (d) List any four DBMS software.
- (e) Enlist different types of data model.
- (f) Enlist properties of relational table.
- (g) State the characteristics of SQL (six points).
- (h) Enlist four properties of transaction.
- (i) List four advantages of using snapshots.

(B) Attempt any TWO of the following :**8**

- (a) Explain DBMS architecture with neat labelled diagram.
- (b) List types of join. Explain it with example in detail.
- (c) Explain control structure in PL/SQL in brief.

2. Attempt any FOUR of the following :**16**

- (a) List the characteristics of Database Administrator (4 points).
Explain
 - (i) Schema and physical organization modifications
 - (ii) Granting of authorization for data access
- (b) Explain following advantages of Relational Model :
 - (i) Data independence
 - (ii) Simplicity
 - (iii) Group data manipulation
 - (iv) Less overhead management
- (c) List different datatypes of SQL. Explain any two of them.
- (d) Give difference between where clause and having clause (four points).
- (e) Explain the following sequences in SQL with syntax and example :
 - (i) Creating sequences
 - (ii) Dropping sequences
- (f) Write a program in PL/SQL to give following output :

```
*  
  
* * *  
  
* * * * *
```

3. Attempt any FOUR of the following :**16**

- (a) List and explain two types of distributed database.
- (b) Explain the steps for designing ER model.
- (c) Give difference between multi-valued dependencies and functional dependency (four points).
- (d) List four data integrity constraints. Explain each one of them in detail.
- (e) Explain the following synonyms in SQL with syntax and example :
 - (i) Creating synonyms
 - (ii) Dropping synonyms
- (f) List and explain predefined exceptions in PL/SQL

4. Attempt any FOUR of the following :**16**

- (a) Explain properties of Dataware housing with neat labelled diagram.
- (b) Explain four phases of database design in detail.
- (c) List types of SQL operators. Explain each one of them in detail.
- (d) Define views with its syntax and list four disadvantages of views.
- (e) Write a program using storage error predefined exception in PL/SQL.
- (f) Define cursors, list types of cursors and give purpose of using cursor.

5. Attempt any FOUR of the following :**16**

- (a) Draw E-R diagram for bank management system (Assume suitable data).
- (b) Explain the following string functions of SQL with syntax in detail with example :
 - (i) REPLACE
 - (ii) TRANSLATE

P.T.O.

- (c) Explain ACID properties of transactions.
- (d) Explain how indexes can be used for both single column and multiple column.
- (e) Define Locking. List two types of locks and explain any one locking protocol.
- (f) Explain triggers. When it is used ?

6. Attempt any FOUR of the following :

16

- (a) Explain Relational Algebra with example for
 - (i) Set difference operation
 - (ii) Natural join
 - (b) Enlist features of
 - (i) tuple relational calculus (four points)
 - (ii) domain relational calculus
 - (c) Draw and explain different steps of transactions.
 - (d) Define serializability and explain different types of schedule.
 - (e) Give difference between stored procedure and PL/SQL function (four points).
 - (f) Explain fetching record from cursor with example.
-