

## DIT-05

### Database Management System

Diploma in Information Technology (DIT-17)

Second Semester, Examination, 2018

**Time : 3 Hours**

**Max. Marks : 80**

**Note :** This paper is of **eighty (80)** marks containing **three (03)** Sections A, B and C. Learners are required to attempt the questions contained in these Sections according to the detailed instructions given therein.

#### Section-A

##### (Long Answer Type Questions)

**Note :** Section 'A' contains four (04) long answer type questions of nineteen (19) marks each. Learners are required to answer *two* (02) questions only.

1. Answer the following :
  - (a) What do you mean by mapping cardinality ?
  - (b) What is Foreign Key ?
  - (c) What is inner join ? Discuss with example.
  - (d) Differentiate between weak and strong entity set.
2. Explain basic structure of SQL. Write down complete syntax of create, insert, delete and modification commands supported by SQL. Explain 'group by' SQL query with example.

3. Explain normalization and its all normal forms (1NF, 2NF, 3NF, BCNF, 4NF).
4. What is Data Independence ? What is the difference between Logical and Physical Independence ?

### Section–B

#### (Short Answer Type Questions)

**Note :** Section ‘B’ contains eight (08) short answer type questions of eight (08) marks each. Learners are required to answer *four* (04) questions only.

1. How E-R Diagrams are useful in designing a logical database ? Give a suitable example.
2. What is data dictionary ? What are their applications and benefit ?
3. What is the characteristics of SQL ? Explain
4. What is referential integrity ? Why is it useful in relational model ?
5. What are the different types of database failure ?
6. What do you mean by database view ? Define database view architecture.
7. Write syntax to :
  - (a) Create a table
  - (b) Inserting data in the table
  - (c) Fetching data from table(with and without where clause)
8. What are the advantages of DBMS over File Processing System ?

### Section–C

#### (Objective Type Questions)

**Note :** Section ‘C’ contains ten (10) objective type questions of one (01) mark each. All the questions of this Section are compulsory.

1. In an E-R diagram an entity set is represent by a/an :
  - (a) Rectangle

- (b) Ellipse
  - (c) Diamond box
  - (d) Circle
2. Architecture of the database can be viewed as :
- (a) two levels
  - (b) four levels
  - (c) three levels
  - (d) one level
3. The database schema is written in :
- (a) HLL
  - (b) DML
  - (c) DDL
  - (d) DCL
4. In the architecture of a database system external level is the :
- (a) Physical level
  - (b) Logical level
  - (c) Conceptual level
  - (d) View level
5. Which of the following is an attribute that holds a single value for a single entity ?
- (a) Simple
  - (b) Composite
  - (c) Derived
  - (d) Single-valued

6. In the relational modes, cardinality is termed as :
  - (a) Number of tuples
  - (b) Number of attributes
  - (c) Number of tables
  - (d) Number of constraints
7. Count function in SQL returns the number of :
  - (a) Values
  - (b) Distinct values
  - (c) Groups
  - (d) Columns
8. The DBMS language component which can be embedded in a program is :
  - (a) The data definition language (DDL)
  - (b) The data manipulation language (DML)
  - (c) The database administrator (DBA)
  - (d) A query language
9. Which two files are used during operation of the DBMS ?
  - (a) Query languages and utilities
  - (b) DML and query language
  - (c) Data dictionary and transaction log
  - (d) Data dictionary and query language
10. In the architecture of a database system external level is the :
  - (a) physical level
  - (b) logical level
  - (c) conceptual level
  - (d) view level