DATABASE MANAGEMENT SYSTEM

Full marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer *all* the questions.

GROUP – A

1. (a) Select the correct answer. (any *five*) :

    $1 \times 5 = 5$

    (i) An advantage of the database management approach is

    (A) Data is dependent on programs

    (B) Data redundancy increases

    (C) Data is integrated and can be accessed by multiple programs

    (D) None of the above

    (ii) In an ER model, ——— is described in the database by storing its data.

    (A) Entity   (B) Attribute

    (C) Relationship   (D) Notation

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(iii) —— keyword is used to find the number of values in a column.

(A) TOTAL   (B) COUNT

(C) ADD   (D) SUM

(iv) Key used to represent relationship between tables is called

(A) Primary key   (B) Secondary key

(C) Foreign key   (D) None of the above

(v) Which can be used to delete all the rows of a table ?

(A) Delete*from table_name

(B) Delete from table_name

(C) Delete table_name

(D) All rows cannot be deleted at a time.

(vi) A distributed database is which of the following ?

(A) A single logical database that is spread to multiple locations and is interconnected by a network.

(B) A loose collection of file that is spread to multiple locations and is interconnected by a network.

(C) A single logical database that is limited to one location.

(D) A loose collection of file that is limited to one location.

(b) Fill up the blanks. (any *five*) :   1×5=5

  (i) DBMS is a collection of ——— that enables user to create and maintain a database.

 (ii) The collection of information stored in a database at a particular moment is called as ———.

(iii) A ——— architecture DBMS distributes data processing tasks between the workstation and network server.

(iv) In the _____ normal form, a composite attribute is converted to individual attributes.

 (v) A transaction that completes its execution successfully is said to be _____.

(vi) Storing a separate copy of the database at multiple locations called _____.

(c) State true or false. (any *five*) : 1×5=5

    (i) Schema is the logical structure of the database.

    (ii) To change column value in a table the Insert SQL command can be used.

    (iii) NULL operator tests column for the presence of data.

    (iv) Lock is piece of hardware assigned to a data item in a database.

    (v) Digital Signature are used to provide authenticity of data.

    (vi) In homogeneous distributed database all sites do not have identical database.

(d) Answer the following. (any *ten*) : 1×10 =10

    (i) Define Database.

    (ii) What do you mean by Primary Key ?

    (iii) What is a field of a database ?

    (iv) What do you mean multi valued attribute ?

    (v) Write the full form of SQL.

    (vi) What is a View ?

(vii) Give one example of one to many relationship.

(viii) What SQL command is used for finding the maximum values ?

(ix) Give the full form of BCNF.

(x) What command is used in order to undo the work of transaction after last commit ?

(xi) What is a schedule ?

(xii) Why Password is used ?

GROUP – B

2. Answer the following. (any *five*) : $2 \times 5 = 10$

(a) Define Data Model.

(b) Define Data Independence.

(c) Write the syntax of SELECT command.

(d) What do you mean by DML and DDL ?

(e) What is a Data Encryption ?

(f) What is data fragmentation ?

3 Answer the following (any *five*) : $3 \times 5 = 15$

(a) Write briefly about users of DBMS.

(b) Explain briefly the Three-schema architecture.

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(c) Write briefly about DBMS interfaces.

(d) Write briefly about Physical data model.

(e) Define Second and Third normal forms.

(f) What do you mean by Deadlock and Starvation ?

(g) What is Authorization ?

4 Answer the following. (any *five*) :   4×5=20

(a) Write the advantages of using a Database Approach.

(b) Write briefly about the symbols used in E-R diagram.

(c) What is normalization ? Why is it necessary ?

(d) Write briefly about ACID property of transaction.

(e) Discuss briefly the Lost Update Problem and Dirty Read Problem.

(f) What is two phase locking protocol ? Discuss briefly.

(g) What are the advantages of Distributed Database ?