[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 2704 **A**

Unique Paper Code : 62341201–OC (2015-18)

Name of the Paper : Database Management Systems

Name of the Course : **B.A. Prog.**

Semester : II

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Question no. **1** is Compulsory.
3. Answer any **five** questions from Question No. **2** to **8**.

Q. 1

a) How redundancy leads to inconsistency? Explain with a suitable example. (3)

b) Explain Second normal form with a suitable example. (4)

c) Write SQL command to create table PRODUCT with following fields and their constraints:- (2)
prod_id is the primary key;
prod_name should not be blank;
contact_mail should be unique;
price up to 2 decimal places and
city with default value 'Delhi'.

P.T.O.

d) Write any four roles of a Data Base Administrator. (4)

e) Write SQL Command to add an attribute ADDRESShaving size of 26 characters to the relation Employee. (2)

f) What is the use of DISTINCT keyword in SQL Query? Explain with the help of a suitable query. (2)

g) Consider a relation Student(rollno, name, address, phone, marks) where the attribute 'name'is composed of Fname and Lname. (4)

Differentiate between simple and composite attributes also identify the same from the above relation Student.How the attribute 'name' would be indicated in an ER Diagram?

h) A database consists offollowing relations: (4)

Emp(empid,name,address, deptid)

Dept(deptid,deptName)

Define and identify Primary Key and Foreign Key with respect to the above relations.

Q. 2 Consider a Company database having following relations: 2X5
Branch (b_id,bname, location, phone)
Salesman(s_id,sname,b_id,product,qty,price)
Write SQL statements for the following:-

(i) To create the tablesBranch and Salesman
(ii) To count the total number of salesman engaged in selling the product "fan".
(iii) To display the total quantity sold by each salesman.
(iv) Display the names of the salesman and the commission earned by each salesman, where commission = 5% of the price.

Q.3(a) Write any four disadvantages of file system. (4)

(b) Explain Network Model with one advantage and one disadvantage. (4)

(c) For each of the following commands, indicate whether it belongs to DDL or DML (2)
(i) Select (ii) Update (iii) Delete (iv) Drop.

Q.4 (a) Explain different types of data anomalies with a suitable example. How can such anomalies be eliminated? (5)

(b) What do you understand by the term Data Independence? Also state its types. (3)

(c) A relation Student has 5 columns and 10 rows. What is the cardinality & degree of the relation Student? (2)

Q.5 Construct an ER Diagram for a database Companyhaving following relations: (10)

Entity	Attribute
Department	Dept_id, dname, dlocation, project,e_id
Employee	E_id, ename,p_id,dept_id
Project	P_id,pname,e_id,start_date,end_date

a) A Company can have more than one department.
b) More than one employee work in a department .
c) An employee may be working in more than one project

Q.6(a) Define derived attribute with the help of a suitable example. Also state any two advantages of the derived attribute. (2+2)

(b) Differentiate between strong and weak entities with a help of suitable example. How strong and weak entities would be indicated in the ER Diagram. (4)

(c) Rewrite given SQL query without using IN Special operator (2)

```
Select *
From Car
Where Price IN(500000, 700000, 900000);
```

Q.7(a) A table has been shown hereunder. (6)

Eid	Name	Car colour	Dependent	City
1	Ram Narayan	Blue,white	rakesh	New Delhi
2	Krishna	Blue,Green	Jagdish	Lucknow
3	Jagdish	Black	Aakash,Rohit	Kanpur

Convert the above relation into first normal form and then to second normal form.

b Answer any two from the following: (4)

a. Explain Relationship and type of relationships
b. Differentiate between single_user and multi_user databases
c. Differentiate between COMMIT and ROLLBACK

8) (10)

Relation T1

Eid	Dept
1001	HR
1002	Sale

Relation T2

Eid	Dept
1001	IT
1005	HR

Based on aforementioned relations T1 and T2, answer the following.

a) T1 natural joinT2
b) T1 left outer join T2
c) T1 UNION T2
d) T1 Difference T2
e) T1 IntersectT2