9 MAY / 7 JUNE

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[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 2689 A

Unique Paper Code : 62341201_OC (2015-18)

Name of the Paper : Database Management Systems

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

Semester : IInd

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. Answer any **five** questions from Question No. **2** to **8**.

Q.1 (a) What do you understand by relationship in DBMS? Also explain the different types of relationships with suitable example. (4)

(b) Give SQL Command to change the size of an attribute Address to 25 of the relation Student. (2)

(c) A database consists of two relations Person and Order (3)

Person(PersonID, Name, Age, Address)

Order(OrderID, PersonID, OrderNum)

Identify and explain Primary Key and Foreign Key in the above relations.

(d) Differentiate between the following: (4)

(i) Centralized and Distributed Databases.

(ii) Required and Optional Attributes.

(f) Explain entity integrity rule and what is its purpose. (2)

(g) A database consists of the relation Student: (4)

Student (rollno, pname, class, phone, grades, DoB)

Identify composite attribute. How it would be indicated in ER diagram?

P.T.O.

(h) What do you understand by cardinality? (1)

(i) What do you mean by Meta-data and Data dictionary? (2)

(j) Rewrite given SQL queries using(IN, BETWEEN): (3)

(i) IN

```
Select Rno, Name, Address
From Student
Where Rno=5 or Rno=6 or Rno=8;
```

(ii) BETWEEN

```
Select Pno, Pname, Price
From Product
Where Price >= 1000 and Price <= 2000;
```

Q.2 (a) Write any three advantages and three disadvantages of network model. (6)

(b) What is the importance of referential integrity in a database? Explain with the help of an example. (4)

Q.3 (a) Explain any two DBMS functions from the following:- (4)

(i) Data Storage Management.

(ii) Multiuser Access Control.

(iii) Database Communication Interfaces.

(b) What are the main components of DBMS? (6)

Q.4 With respect to a commercial organization XYZ Ltd., create a database having following relations: (10)

EMPLOYEE

E_id	Ename	DOB	Salary	Address	Did

DEPARTMENT

D_id	Dname	Dlocation	Proj_id

PROJECT

Proj_id	Proj_name	Proj_duration

Draw an ER Diagram for the above database.

Also depict Age of the employee and describe what type of attribute it is. (3)

Q.5 (a) Given a query:

```
DELETE From Customer
```

Where State = 'Rajasthan';

COMMIT;

What will happen if you run the above query? Also differentiate between Commit and Rollback commands in SQL.

(b) What do you mean by Normalization? (5)

Consider a relation Movies_Screened with attributes Theatre_name, Movie, Day, Time, and Age_restriction.

A theatre can screen more than one movie on the same day and time on different screens. Age_restriction provides the minimum age limit to watch that particular movie as instructed by the central board of film certification. Does this relation satisfy 2NF conditions? If not then convert it into 2NF.

(c) Explain composite identifier with a suitable example. (2)

Q.6 Consider the following relations L1 and L2: (10)

L1

ENO	NAME
2000	Rohit
1991	Anand
1560	Singh
2012	Kasim

L2

ENO	NAME
1201	Raj
2000	Kusum
1560	Nancy
3008	Preeti

Show the result of the following operations:

(a) L1 PRODUCT L2
(b) L1 INTERSECTION L2
(c) L1 UNION L2
(d) SELECT only ENO greater than 2000(Note: using the relation L1)
(e) L1 DIFFERENCE L2

Q.7 Consider the following relations:. (10)
Salesperson (SNo, Sname, Designation)
Product (PNo, Pname, Cost)
SAP (SNo, AreaNo, PNo)

Write SQL queries for the following:

(a) Create a table Product. Specify the constraint that cost of a product cannot be greater than Rs.10000/-

(b) Get the names of all products that are sold by the salesperson number 5.

(c) Increase the cost of PNo= 2 by 10.

(d) Add the field email of 25 characters in the table Salesperson.

(e) Count the total number of suppliers who are supplying the product 'screw'. (5)

Q.8

Worker_Table

WorkerID	First_name	Department	Salary	Joining_Date
101	Harsh	HR	1000000	1/12/2020
102	Mehek	Admin	3000000	2/03/2020
103	Preeti	Account	5000000	5/07/2019
104	Sanjay	Admin	2000000	4/04/2021

Worker_Title

WorkerID	Title	DateOfJoin
101	Manager	1/05/2021
102	Executive	2/05/2019
103	Manager	4/05/2020
104	Lead	1/05/2020

Using the above tables, give the output that will be produced on execution of the following SQL Commands:-

(i) SELECT * FROM Worker_Table ORDER BY Salary DESC;

(ii) SELECT * FROM Worker_Table, Worker_Title WHERE Title= 'Manager';

(iii) SELECT Salary FROM Worker_Table WHERE First_name LIKE '%H';

(iv) SELECT First_name,Department from Worker_Table where Department = 'HR';

(v) SELECT * FROM Worker_Table where WorkerID=(SELECT MIN(WorkerID) from Worker_Table);

(b) Consider a relation EMPLOYEE(EmpID, Name, Address, Child_name, Child_DoB). 5

What do you understand by multivalued attributes? Which attribute is multivalued attribute(s) in the above relation? How it can be handled within the database design?

(100)