

## **SOLUTIONS**

### **QUE.1:-**

Database is a place where we store the data in a organised way for easy retrival.

Database is collection of useful information.

Databse is storage we can store the data

#### **Advantages of Dbms:-**

- 1.Improved the security
- 2.Better data integration
- 3.No data redundancy
- 4Minimized data inconsistency
- 5.Increased end user productivity.

### **Que:-2**

Entity integrity ensures each row in a table is a uniquely identifiable entity.we can apply entity integrity to the table by specifying a primary key,unique key and not null.

### **Que:-3**

Er model stands for an entity –relationship model.It is a high level data model .This model is used to define the data elements and relationship for a specified system.It develops a conceptual design for the database .It also develops a very simple and easy to design view of data.in ER modelling ,the database structure is portrayed as a diagram called an entity-relationship diagram.

### **Que:-4**

An entity that depends upon another entity is called a weak entity.The weak entity doesn't contain any key attribute of its own.the weak entity is represented by double rectangle.

### **Que:-5**

DDL stands for Data Definition Language ,which deals with database schemas and description ,of how the data should reside in the database.

#### **DDI Commands:-**

Create:-to create a database and its objects

Alter:-alters the structure of the existing database

Drop:-delete the objects from the database.

Truncate:-remove all records from a table ,including all spaces allocated for the records are removed.

**Que:-6**

Dml stans for Data Maniulations language which is deals with data manipulation and includes most common sql statement Such as SELECT,INSERT, UPDATE,DELETEetc and it is used to store ,modify retrieve,delete and update data in database.

SELECT:-retrive data from database

INSERT:-insert data into a table

UPDATE:-update existing data within in a table

DELETE:-Delete all records from a database table.

**Que:-7**

Normalization is a process of organizing the data in the dtabase .Normalization is used to minimize the redundancy from a relation or a set of relations It is ueds to eliminate undesirable characteristics.

**Que:-8**

Functional dependency inDBMS ,as the name suggest is a relationship between attributes of a table dependant on each other it introduced by E.F.codd.It helps in preventing data redundancy.

**Que:-9**

**1nf**

It contains an atomic value

An attribute cannot hold multiple values .It must be single valued attribute

**2nf**

Relation must be in 1nf

All non key attributes must be fully functional dependant on the primary key

**3nf:-**

A relation will be in 3nf it is in 2nf and not contain any transitive partial dependency

3nf is used to reduce the data duplication it is used to cheive the data integrity

If ther is no transitive dependency for non prime attribute then the relation must be in third normal form.

**Que:-10**

Four Types

Primary key:-

It is the key in which is used to identify the one and only one instance of an entity uniquely. A p.k is cannot have null values.

Candidate Key:-

It is an attribute or a set of an attribute which can uniquely identify a tuple. The remaining attributes including primary key are considered as a candidate key.

Super Key:-

It is a combination of all possible attribute which can uniquely identify two tuples in the table.

It is a superset of candidate key.

Foreign Key

It is used to establish relationship between two tables.

The key should be primary key of some other key.

**Que11:-**

SQL is a structured Query language. This is used to interact with the database.

SQL is used to write the commands that produce an action where as programming language are used to create apps and programs.

**Que12:-**

A stored procedure **allows them to be executed with a single call**. This minimizes the use of slow networks, reduces network traffic, and improves round-trip response time. OLTP applications, in particular, benefit because result set processing eliminates network bottlenecks.

**Que13:-** a) is in 1NF since  $(AC) \neq (A, B, C)$  hence AC is the primary key. Since CB is a FD given whether neither C is a key nor B is prime attribute, this is not in 3NF. Further B is not functionally dependent on key AC it is not in 2NF. Thus it is in 1NF.

**Que14:-** a) on the N side in a 1 : N relationship

b) on the 1 side in a 1 : N relationship

c) on either side in a 1 : 1 relationship

d) nothing to do with 1 : 1 or 1 : N relationship

**ANS:** C) On either side in a 1:1 relationship

**Que15:-**

Cross join

Natural Join/Inner join

Equi-join

Self join

Outer Join:-Left outer join,right outer join,full outer join.

**Ques16:-**

The data definition Language is used to manage table and index structure. Create, Alter, Rename, Drop and truncate are the commands.

**Que:-17**

Like Operator is performs pattern matching.

**Que:-18**

True

**Que19:-**

The TRUNCATE statement in SQL **removes all data from the table and free the table's space**. SQL's DELETE statement removes all data from the table but does not free the table's space.

**Que20:-**

**Select Command** is used create a table by copying the structure of another table

**Que21:-** SELECT REPLACE(TRANSLATE(LTRIM(RTRIM('!! ATHEN !!','!'), '!'), 'AN', '\*\*'),'\*', 'TROUBLE')  
FROM DUAL;

**ANS:** TROUBLE THE TROUBLE

**Que22:-**

The **DATEDIF** Function is used to find the difference between the two dates.

**Que23:-**

It is used to constraints on the table or delete column in the table

**Que24-** UPDATE EMP SET SAL = SAL + 1000, COMM = SAL\*0.1;

sal = 11000, comm = 1000  
**ANS:** sal=11000 ,comm = 1000

**Que25:-**

To Delete the rows from child table automatically,when the rows from the parent table is deleted

## PART – II( Questions based on SQL Queries )

Following are the schemas given:

**Table 1 : STUDIES**

PNAME (VARCHAR), SPLACE (VARCHAR), COURSE (VARCHAR), CCOST (NUMBER)

**Table 2 : SOFTWARE (AKA package)**

PNAME (VARCHAR), TITLE (VARCHAR), DEVIN (VARCHAR), SCOST (NUMBER), DCOST (NUMBER), SOLD (NUMBER)

**Table 3 : PROGRAMMER**

PNAME (VARCHAR), DOB (DATE), DOJ (DATE), SEX (CHAR), PROF1 (VARCHAR), PROF2 (VARCHAR), SAL (NUMBER)

**Column name description:**

PNAME – Programmer Name

SPLACE – Study Place

CCOST – Course Cost

DEVIN – Developed in (Developed in which technology e.g.; Oracle, C, C++ etc.)

SCOST – Software Cost

DCOST – Development Cost

PROF1 – Proficiency 1

PROF2 – Proficiency 1

1. Find out the selling cost average for packages developed in Oracle.

1. **ANS:** SELECT AVG (SCOST)  
FROM SOFTWARE  
WHERE DEVIN =ORACLE;

**2. Display the names, ages, and experience of all programmers.**

**ANS:** SELECT PNAME, ROUND(MONTH\_BETWEEN (SYSDATE, DOB))/12 AS "AGE",  
BETWEEN(MONTH\_BETWEEN (SYSDATE, DOJ))/12 AS "EXPERINCE"  
FROM PROGRAMMER;

**3. Display the names of those who have done the PGDCA course.**

**ANS:** SELECT PNAME  
FROM STUDIES  
WHERE COURSE = 'PGDCA';

**4. What is the highest number of copies sold by a package?**

**ANS:** SELECT MAX(SOLD)  
FROM SODTWARE;

**5. Display the names and date of birth of all programmers born in April.**

**ANS:** SELECT PNAME, DOB  
FROM PROGRAMMER  
WHERE TO\_CHAR(HIREDATE, 'MON') = 'APRIL';

**6. Display the lowest course fee.**

**ANS:** SELECT MIN(CCOST)  
FROM STUDIES;

**7. How many programmers have done the DCA course?**

**ANS:** SELECT COUNT(\*)  
FROM STUDIES  
WHERE COURSE='DCA';

**8. How much revenue has been earned through the sale of packages developed in C.?**

**ANS:**

**9. Display the details of software developed by Rakesh.**

**ANS:** SELECT \*  
FROM SOFTWARE  
WHERE PNAME= 'RAKESH';

**10. How many programmers studied at PentaFour?**

**ANS:** SELECT \*  
FROM STUDIES  
WHERE SPLACE='PENTAFOUR';

**11. Display the details of packages whose sales crossed the 5000 mark.**

**ANS:** SELECT \*  
FROM SOFTWARE  
WHERE SCOST>5000;

**12. Find out the number of copies which should be sold in order to recover the development cost of each package.**

**13. Display the details of packages for which the development cost has been recovered.**

**ANS:**       SELECT \*  
              FROM SOFTWARE  
              WHERE SCOST \*SCOST>=DCOST;

**14. What is the price of costliest software developed in VB?**

**ANS:**       SELECT MAX (SAL)  
              FROM SOFTWARE  
              GROUP BY DEVIN  
              HAVING DEVIN = 'VB';

**15. How many packages were developed in Oracle?**

**ANS:**       SELECT COUNT (\*)  
              FROM SOFTWARE  
              WHERE DEVIN ='ORACLE';

**16. How many programmers studied at PRAGATHI?**

**ANS:**       SELECT COUNT (\*)  
              FROM PROGRAMMER  
              WHERE PID IN(SELECT PID  
                              FROM STUDIES  
                              WHERE SPLACE INPRAGATHI);

**17. How many programmers paid 10000 to 15000 for the course?**

**ANS:**       SELECT COUNT (\*)  
              FROM STUDIES  
              WHERE CCOST BETWEEN 10000 AND 15000;

**18. What is the average course fee?**

**ANS:**       SELECT AVG (CCOST)  
              FROM STUDIES;

**19. Display the details of programmers knowing C.**

**ANS:**       SELECT AVG (SAL)  
              FROM PROGRAMMER  
              WHERE PROF1='C' OR PROP2='C';

**20. How many programmers know either C or Pascal?**

**ANS:**       SELECT \*  
              FROM PROGRAMMER  
              WHERE PROF1 IN ('C', ; PASCAL') OR PROF2 IN ('C', ; PASCAL');

