**DEPARTMENT OF COMPUTER APPLICATIONS**

**18MX27 – RDBMS – LAB EXERCISES**

1. **Write SQL commands for (b) to (e) and write the outputs for (f) on the basis of table GRADUATE.  
Table: GRADUATE**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.NO.** | **NAME** | **STIPEND** | **SUBJECT** | **AVERAGE** | **DIV** |
| 1 | KARAN | 400 | PHYSICS | 68 | 1 |
| 2 | DIVAKAR | 450 | COMPUTER SC | 68 | 1 |
| 3 | DIVYA | 300 | CHEMISTRY | 62 | 2 |
| 4 | ARUN | 350 | PHYSICS | 63 | 111111 |
| 5 | SABINA | 500 | MATHEMATICS | 70 | 1 |
| 6 | JOHN | 400 | CHEMISTRY | 55 | 2 |
| 7 | ROBERT | 250 | PHYSICS | 64 | 1 |
| 8 | RUBINA | 450 | MATHEMATICS | 68 | 1 |
| 9 | VIKAS | 500 | COMPUTER SC | 62 | 1 |
| 10. | MOHAN | 300 | MATHEMATICS | 57 | 2 |

(a) List the names of those students who have obtained **DIV 1** sorted by **NAME**.  
(b) Display a report, listing **NAME, STIPEND, SUBJECT** and amount of stipend received in a year assuming that the **STIPEND** is paid every month.  
(c) To count the number of students who are either **PHYSICS** or **COMPUTER SC** graduates.  
(d) To insert a new row in the **GRADUATE** table: **11, “KAJOL”, 300, “COMPUTER SC”, 75, 1**(e) Give the output of following SQL statement based on table **GRADUATE**:

(I) Select **MIN(AVERAGE)** from **GRADUATE** where **SUBJECT= “PHYSICS”;**(II) Select **SUM(STIPEND**) from **GRADUATE** where **DIV=2;**(III) Select **AVG(STIPEND**) from **GRADUATE** where **AVERAGE>=65;**(IV) Select **COUNT**(distinct **SUBJECT**) from **GRADUATE**;

(f) Assume that there is one more table **GUIDE** in the database as shown below:

**Table: GUIDE**

|  |  |
| --- | --- |
| **MAINAREA** | **ADVISOR** |
| PHYSICS | VINOD |
| COMPUTER SC | ALOK |
| CHEMISTRY | RAJAN |
| MATHEMATICS | MAHESH |

**What will be the output of the following query:**SELECT NAME, ADVISOR

|  |  |
| --- | --- |
| FROM | GRADUATE, GUIDE |
| WHERE | SUBJECT = MAINAREA |

**2. Write SQL commands for (a) to (d) and write the outputs for (f) on the basis of table CLUB.  
Table: CLUB**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **COACH \_ID** | **COACH NAME** | **AGE** | **SPORTS** | **DATEOFAPP** | **PAY** | **SEX** |
| 1. | KUKREJA | 35 | KARATE | 27/03/1997 | 1000 | M |
| 2. | RAVINA | 34 | KARATE | 20/01/1998 | 1200 | F |
| 3. | KARAN | 34 | SQUASH | 19/02/1998 | 2000 | M |
| 4. | TARUN | 33 | BASKETBALL | 01/01/1998 | 1500 | M |
| 5. | ZUBIN | 36 | SWIMMING | 12/01/1998 | 750 | M |
| 6. | KETAKI | 36 | SWIMMING | 24/02/1998 | 800 | F |
| 7. | ANKITA | 39 | SQUASH | 20/02/1998 | 2200 | F |
| 8. | ZAREEN | 37 | KARATE | 20/02/1998 | 1100 | F |
| 9. | KUSH | 41 | SWIMMING | 13/01/1998 | 900 | M |
| 10. | SHAILYA | 37 | BASKETBALL | 19/02/1998 | 1700 | M |

(a) To show all information about the swimming coaches in the club.  
(b) To list names of all coaches with their date of appointment **(DATEOFAPP)** in descending order.  
(c) To display a report, showing coachname, pay, age and bonus (15% of pay) for all the coaches.  
(d) To insert in a new row in the **CLUB** table with the following data:  
**11, “PRAKASH”, 37, “SQUASH”, {25/02/98}, 2500, “M”**(e) Give the output of following SQL statements:

(i) Select COUNT(distinct SPORTS) from CLUB:  
(ii) Select MIN(AGE) from CLUB where SEX = “F”;  
(iii) Select AVG(PAY) from CLUB where SPORTS = “KARATE”;  
(iv) Select SUM(PAY) from CLUB where DATOFAPP > {31/01/98};

(f) Assume that there is one more table **COACHES** in the database as shown below:  
**Table: COACHES**

|  |  |  |
| --- | --- | --- |
| **SPORTS PERSON** | **SEX** | **COACH\_NO** |
| AJAY | M | 1 |
| SEEMA | F | 2 |
| VINOD | M | 1 |
| TANEJA | F | 3 |

**What will be the output of the following query:**  
SELECT

SPORTSPERSON, COACHNAME FROM CLUB, COACHES  
WHERE COACH\_ID = COACH\_NO

3. **Write SQL commands for (i) to (vii) on the basis of the table SPORTS  
Table: SPORTS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Student No.** | **Class** | **Name** | **Game1** | **Grade** | **Game2** | **Grade** |
| 10 | 7 | Sammer | Cricket | B | Swimming | A |
| 11 | 8 | Sujit | Tennis | A | Skating | C |
| 12 | 7 | Kamal | Swimming | B | Football | B |
| 13 | 7 | Venna | Tennis | C | Tennis | A |
| 14 | 9 | Archana | Basketball | A | Athletic | C |

(i) Display the names of the students who have grade ‘C’ in either Game1 or Game2 or both.  
(ii) Display the number of students getting grade ‘A’ in Cricket.  
(iii) Display the names of the students who have same game for both Game1 and Game2.  
(iv) Display the games taken up by the students, whose name starts with ‘A’.  
(v) Add a new column named ‘Marks’.  
(vi) Assign a value 200 Marks for all those who are getting grade ‘B’ or grade ‘A’ in both Game1 and Game2.  
(vii) Arrange the whole table in the alphabetical order of Name.

4. **Given the following Teacher relation: Write SQL commands for question (a) to (f)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **Department** | **Dateofjoining** | **Salary** | **Sex** |
| 1. | Raja | Computer | 21/05/98 | 80000 | M |
| 2. | Sangita | History | 21/05/97 | 9000 | F |
| 3. | Ritu | Sociology | 29/08/98 | 8000 | F |
| 4. | Kumar | Linguistics | 13/06/96 | 10000 | M |
| 5. | Venkatraman | History | 31/10/99 | 8000 | M |
| 6. | Sidhu | Computer | 21/05/86 | 14000 | M |
| 7. | Aishwarya | Sociology | 11/1/98 | 12000 | F |

(a) To select all the information of teacher in computer department.  
(b) To list the name of the female teacher in History department.  
(c) To list all names of teachers with date of admission in ascending order.  
(d) To display Teacher’s name, Department, and Salary of female teachers.  
(e) To count the number of teachers whose salary is less than 10,000.  
(f) To insert a new record in the Teachers table with the following data:  
**8, “Mersa”, “Computer”, {1/1/2000}, 12000, “M”.**  
(g) Give the output of the following SQL commands:

(i) SELECT MIN(DISTINCT Salary) FROM Teacher  
(ii) SELECT MIN(Salary) FROM Teacher WHERE Sex = “M”  
(iii) SELECT SUM(Salary) FROM Teacher WHERE Department = “History”  
(iv) SELECT ACG(Salary) FROM Teacher WHERE dateofjoining< {1/1/98}

5. **Given the following tables for a database INTERIORS:  
Write SQL command for (a) to (f) and write the outputs for (g) on the basis of tables INTERIORS and NEWONES.**  
**Table: INTERIORS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **NO.** | **ITEMNAME** | **TYPE** | **DATEOFSTOCK** | **PRICE** | **DISCOUNT** |
| 1 | Red rose | Double bed | 23/02/02 | 32000 | 15 |
| 2 | Soft touch | Baby cot | 20/01/02 | 9000 | 10 |
| 3 | Jerry’s home | Baby cot | 19/02/02 | 8500 | 10 |
| 4 | Rough wood | Office Table | 01/01/02 | 20000 | 20 |
| 5 | Comfort zone | Double bed | 12/01/02 | 15000 | 20 |
| 6 | Jerry look | Baby cot | 24/02/02 | 7000 | 19 |
| 7 | Lion king | Office Table | 20/02/02 | 16000 | 20 |
| 8 | Royal tiger | Sofa | 22/02/02 | 30000 | 25 |
| 9 | Park sitting | Sofa | 13/12/01 | 9000 | 15 |
| 10 | Dine Paradise | Dining Table | 19/02/02 | 11000 | 15 |

**Table: NEWONES**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **NO.** | **ITEMNAME** | **TYPE** | **DATEOFSTOCK** | **PRICE** | **DISCOUNT** |
| 11 | White wood | Double bed | 23/03/03 | 20000 | 20 |
| 12 | James 007 | Sofa | 20/02/03 | 15000 | 15 |
| 13 | Tom look | Baby cot | 21/02/13 | 7000 | 10 |

(a) To show all information about the sofas from the **INTERIORS** table.  
(b) To list the **ITEMNAME** which are priced at more than 10,000 from the **INTERIORS** table.  
(c) To list **ITEMNAME** and TYPE of those items, in which **DATEOFSTOCK** is before 22/01/02 from the **INTERI0RS** table in the descending order of **ITEMNAME**.  
(d) To display **ITEMNAME** and **DATEOFSTOCK** of those items, in which the discount percentage is more than 15 from **INTERIORS** table.  
(e) To count the number of items, whose type is “**Double Bed**” from **INTERIORS** table.  
(f) To insert a new row in the **NEWONES** table with the following data:  
**14, “True Indian”, “Office Table”,{28/03/03}, 15000,20**(g) Give the output of following SQL statement:  
**Note:** outputs of the below mentioned queries should be based in original data given in both the tables  
i.e**., without considering the insertion done in (f) part of this question.**

(i) Select COUNT(distinct TYPE) from INTERIORS;  
(ii) Select AVG(DISCOUNT) from INTERIORS, where TYPE = “Baby cot”,  
(iii) Select SUM(Price) from INTERIORS where

DATEOFSTOCK < {12/02/02}.

6. Given the following tables for a database FURNITURE :  
NOTE: Write SQL command for (a) to (f) and write the outputs for (g) on the bases of tables  
**FURNITURE** AND **ARRIVALS.  
Table: FURNITURE**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NO.** | **ITEMNAME** | **TYPE** | **DATEOFSTOCK** | | **PRICE** | **DISCOUNT** |
| 1 | White lotus | Double Bed | 23/02/02 | 30000 | | 25 |
| 2 | Pink feather | Baby cot | 20//01/02 | 7000 | | 20 |
| 3 | Dolphin | Baby cot | 19/02/02 | 9500 | | 20 |
| 4 | Decent | Office Table | 01/01/02 | 25000 | | 30 |
| 5 | Comfort zone | Double Bed | 12/01/02 | 25000 | | 25 |
| 6 | Donald | Baby cot | 24/02/02 | 6500 | | 15 |
| 7 | Royal Finish | Office Table | 20/02/02 | 18000 | | 30 |
| 8 | Royal tiger | Sofa | 22/02/02 | 31000 | | 30 |
| 9 | Econo sitting | Sofa | 13/12/01 | 9500 | | 25 |
| 10 | Eating paradise | Dining Table | 19/02/02 | 11500 | | 25 |

**Table: ARRIVALS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **NO.** | **ITEMNAME** | **TYPE** | **DATEOFSTOCK** | **PRICE** | **DISCOUNT** |
| 11 | Wood Comfort | Double Bed | 23/03/03 | 25000 | 25 |
| 12 | Old Fox | Sofa | 20/02/03 | 17000 | 20 |
| 13 | Micky | Baby cot | 21/02/02 | 7500 | 15 |

(a) To show all information about the baby cots from the FURNITURE table.  
(b) To list the ITEMNAME which are priced at more than 15000 from the FURNITURE table.  
(c) To list ITEMNAME AND TYPE of those items, in which DATEOFSTOCK is before 22/01/02  
from the FURNITURE table in descending order of ITEMNAME.  
(d) To display ITEMNAME and DATEOFSTOCK of those items, in which the DISCOUNT  
percentage is more than 25 from FURNITURE table.  
(e) To count the number of items, whose TYPE is “Sofa” from FURNITURE table.  
(f) To insert a new row in the ARRIVALS table with the following data:  
**14, “Velvet touch”, Double bed”, {25/03/03}, 25000, 30**(g) Give the output of following SQL statement:  
**Note: outputs of the below mentioned queries should be based on original data given in both the tables i.e., without considering the insertion done in (g) part of this question.**(i) Select COUNT(distinct TYPE) from FURNITURE;  
(ii) Select MAX(DISCOUNT) from FURNITURE,ARRIVALS;  
(iii) Select AVG(DISCOUNT) from FURNITURE where TYPE = “Baby cot”;  
(iv) Select SUM(PRICE) from FURNITURE where DATEOFSTOCK < {12/02/02}.

7. Given the following tables for a database LIBRARY:

**Table: Books**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Book\_Id** | **Book\_Name** | **Author\_Name** | **Publishers** | **Price** | **Type** | **Qty.** |
| F0001 | The Tears | WilliamHopkins | First Publ. | 750 | Fiction | 10 |
| F0002 | Thunderbolts | Anna Roberts | First Publ. | 700 | Fiction | 5 |
| T0001 | My First C++ | Brian & Brooke | EPB | 250 | Text | 10 |
| T0002 | C++ Brainworks | A.W.Rossaine | TDH | 325 | Text | 5 |
| C0001 | Fast Cook | LataKapoor | EPB | 350 | Cookery | 8 |

**Table**: Issued

|  |  |
| --- | --- |
| **Book\_Id** | **Quantity Issued** |
| F0001 | 3 |
| T0001 | 1 |
| C0001 | 5 |

**Write SQL queries for (a) to (f):**(a) To show Book name, Author name and Price of books of EPB publishers.  
(b) To list the names of the books of Fiction Type.  
(c) To display the names and price of the books in descending order of their price.  
(d) To increase the price of all books of first publisher by 50.  
(e) To display the Book\_Id, Book\_Name and Quantity issued for all books which have been issued.  
 **(The query will require contents from both the tables).**(f) To insert a new row in the table Issued following the data: “F0002”,4  
(g) Give the output of the following queries based on the above tables:

(i) SELECT COUNT(DISTINCT Publishers) FROM Books.  
(ii) SELECT SUM(Price) FROM Books WHERE Quantity > 5.  
(iii) SELECT BOOK\_NAME,AUTHOR\_NAME FROM Books WHERE Price < 500.  
(iv) SELECT COUNT (\*) FROM Books.

8. Write SQL commands for (a) to (f) and write output for (g) on the basis of Teacher relation given below:  
**relation Teacher**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **Age** | **Department** | **Date of join** | **Salary** | **Sex** |
| 1. | Jugal | 34 | Computer | 10/01/97 | 12000 | M |
| 2. | Sharmila | 31 | History | 24/03/98 | 20000 | F |
| 3. | Sandeep | 32 | Maths | 12/12/96 | 30000 | M |
| 4. | Sangeeta | 35 | History | 01/07/99 | 40000 | F |
| 5. | Rakesh | 42 | Maths | 05/09/97 | 25000 | M |
| 6. | Shyam | 50 | History | 27/06/98 | 30000 | M |
| 7. | Shiv Om | 44 | Computer | 25/02/97 | 21000 | M |
| 8. | Shalakha | 33 | Maths | 31/07/97 | 20000 | F |

(a) To show all information about the teacher of history department  
(b) To list the names of female teacher who are in Hindi department  
(c) To list names of all teachers with their date of joining in ascending order.  
(d) To display student’s Name, Fee, Age for male teacher only  
(e) To count the number of teachers with Age>23.  
(f) To inset a new row in the TEACHER table with the following data:  
9, “Raja”, 26, “Computer”, {13/05/95}, 2300, “M”  
(g) Give the output of following SQL statements:

(i) Select COUNT (distinct department) from TEACHER;  
(II) Select MAX (Age) from TEACHER where Sex = “F”  
(iii) Select AVG (Salary) from TEACHER where Date of join < {12/07/96};  
(iv) Select SUM (Salary) from TEACHER where Date of join < {12/07/96};

9. Write SQL commands for (a) to (f) and Write the outputs for (g) on the basis of table HOSPITAL  
**Table: HOSPITAL**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Name** | **Age** | **Department** | **Dateofadm** | **Charges** | **Sex** |
| 1 | Arpit | 62 | Surgery | 21/01/98 | 300 | M |
| 2 | Zarina | 22 | ENT | 12/12/97 | 250 | F |
| 3 | Kareem | 32 | Orthopedic | 19/02/98 | 200 | M |
| 4 | Arun | 12 | Surgery | 11/01/98 | 300 | M |
| 5 | Zubin | 30 | ENT | 24/02/98 | 250 | M |
| 6 | Ketaki | 16 | ENT | 12/01/98 | 250 | M |
| 7 | Ankita | 29 | Cardiology | 20/02/98 | 800 | F |
| 8 | Zareen | 45 | Gynecology | 22/02/98 | 300 | F |
| 9 | Kush | 19 | Cardiology | 13/01/98 | 800 | M |
| 10 | Shilpa | 23 | Nuclear Medicine | 21/02/98 | 400 | F |

(a) To select all the information of patients of cardiology department.  
(b) To list the names of female patients who are in ENT department.  
(c) To list name of all patients with their date of admission in ascending order.  
(d) To display Patient’s Name, Charges, Age for only female patients.  
(e) To count the number of patients with Age<30.  
(f) To inset in a new row in the HOSPITAL table with the following data:  
11, “Aftab”, 24, “Surgery”, {25/02/98}, 300, “M”  
(g) Give the output of following SQL statements:  
(i) Select COUNT (DISTINCT charges) from HOSPITAL;  
(ii) Select MIN (Age) from HOSPITAL where Sex = “F”  
(iii) Select SUM (Charges) from HOSPITAL where Department = “ENT”  
(iv) Select AVG (Charges) from HOSPITAL where Datofadm< {12/08/98}