Q1   Write commands of MySQL (i) to (v) and output for (vi) to (viii)   [8]

PNO	NAME	AGE	DEPARTMENT	DATEOFADM	CHARGES	GENDER
1	Arpit	62	Surgery	2018-01-12	500	M
2	Zarina	22	ENT	2007-12-12	250	F
3	Ankita	29	Cardiology	2008-02-22	800	F
4	Kush	19	ENT	2008-01-13	300	M
5	Shilpa	23	Surgery	2008-01-20	450	F

i.To list the names of female pattients who are in ENT department.
ii.To count the number of patients with age less then 30.
iii.Display the department wise total charges for maximum charges more then and equal to 300.
iv.Add Address column in the above table with char(20) type.
v.change the name of the column Address to Home_Address.
vi.Select count(distinct charges) from Hospital;
vii.Select Max(charges)+Min(charges) from hospital where name like '%a%';
viii.Selectavg(charges),max(charges) from hospital group by department;

Q2.   **Customer**

Acc_no	Cust_Name	Cust_City	Cust_phone	Open_Bal
21001	Sunita	Ambala	9710557614	10000
22002	Sandhya	Patna	8223545233	15000
23003	Vivek	New Delhi	9972136576	13000
24004	Meena	New Delhi	9321305453	10000

Transaction

Trans_Id	Acc_No	Transaction_type	Amount
Tr001	23003	Credit	15000
Tr002	22002	Credit	20000
Tr003	21001	Debit	3500
Tr004	23003	Credit	26000
Tr005	23003	Credit	24000

Consider these tables while attempting the questions given below:
i.Which column can be considered as foreign key column and primary Key column in Transaction table.   [1]
ii.Write a query to display customer's name who has withdrawn the money.   [2]
iii.Find the output:-
Select Acc_no,sum(amount) from customer,Transaction where customer.Acc_no=Transaction.Acc_no group by Acc_no;   [2]
iv.How many rows and column will be there in Cartesian product of the above tables.   [1]
iv. Karan insert new row in Transaction table with information:
insert into Transaction values('Tr006',25005,'Credit',5000);   [2]
but it will no add in table. Give reason for it.

Q3.   What are views? How views are different from table?   [2]
Q4.   What is the purpose of group by clause in MySQL? How is it different from order by clause?   [2]

Q5.

```
    YEAR  MONTH GENDER  BIRTHS    DataFrame:-df
0   2013      1      F    4060
1   2012      1      M    3000
2   2013      2      F    5000
3   2014      2      M    4400
4   2014      1      F    3500
5   2015      3      M    4000
6   2012      2      F    3300
```

a.Write the statement and output for the following (refer above DataFrame(df)):- [4]
i.Display total births for each year(using pivot table).
ii.Display total number of Male and Female for each year(using pivot table).

b.Write the statement for the output:- [2]

```
            count   max   min   sum
YEAR GENDER
2012 F          1  3300  3300  3300
     M          1  3000  3000  3000
2013 F          2  5000  4060  9060
2014 F          1  3500  3500  3500
     M          1  4400  4400  4400
2015 M          1  4000  4000  4000
```

[2]
c.Sort the above DataFrame by YEAR in ascending order and Month in Descending order.(Write Statement and output).

d.Write the statement for sort the above Dataframe by index. [1]

Q6   DataFrame:-'P1'

```
      Country                Resort  Days Travel  Price
0   Australia  Great Barrier Reef    32  Plane    750
1   Australia               Perth    28  Plane    985
2     England              London     3  Train     69
3     England              Bognor     1  Coach     12
4      France                Lyon    14  Plane    399
5      France        Paris Disney     5  Train    269
6      France        Paris Disney     3  Train    125
```

a.Write statement for group the Country and count the Travel and Price columns for all the groups. [1]

b.Add new column [Mean_Price] which stores mean of price that transform for each Country group and next column [Deduct_Price] stores values from Price column values deduct from Mean_pricecolumn(use transform on country groups). [2]

c.Write output for this:
print(P1.groupby(["Country","Resort"]).sum()) [2]

d.Write statements for the following(refer above DataFrame):- [4]
i.print last three columns .
ii.remove the rows 5 and 6.
iii.display subset rows(3,4,5) and cols(first two columns)
iv.Add new column Total_Price stores (Days*Price) values.

Q7.   i.Explain any two Function Application used in DataFramefor user defined functions. [2+2+2]

ii.What is the main problem in pivot .How it can be solve .

iii.Difference between group by and sort operation on DataFrame.

Q8.   i.Write a program to Create a DataFrame which stores DOB and Name with 3 records and split the DOB in three columns Year, Month and Date by using three user define functions and use apply concept to call all these functions for each column. [3]

ii.Write a program to create any two numeric values dataframe, first frame have 3 rows and 3 cols, second frame contains 3 rows and four cols, after that merge both the frame in third and print that frame. [3]