Which of the following statement removes sales and suppliers database? 0.5

A. DROP DATABASE Sales, NewSales
B. DROP DATABASE Sales, suppliers
C. DROP DATABASE Sales and suppliers
D. DROP DATABASE Sales-suppliers

Ans : B

Which of the following statements are TRUE? 0.5

A. A Unique constraint allows multiple rows to have NULL value
B. Integrity constraint can be added to a table even if table data is in violation
C. A PRIMARY KEY allows a single row to contain NULL
D. Both A and B

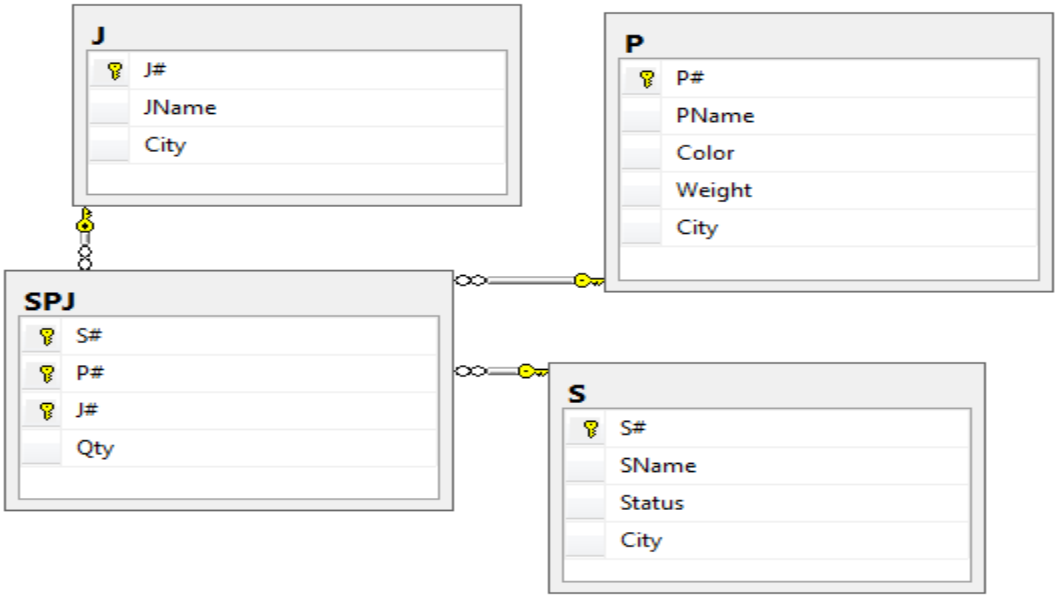
Ans : A

7. Consider we have 30 employees where 20 of them belong to different departments and the rest don't belong to any department. On the other hand, we have 4 departments where each of them have employees assigned to it. How many record will result by performing inner join between Table Employee and Department? 0.5

    10
    20
    30
    40

8. Consider we have 30 employees where 20 of them belong to different departments and the rest don't belong to any department. On the other hand, we have 4 departments where each of them have employees assigned to it. How many record will result by performing full outer join between Table Employee and Department? 0.5

    10
    20
    30
    40



S

S#	SNAME	STATUS	CITY
S1	Smith	20	London
S2	Jones	10	Paris
S3	Blake	30	Paris
S4	Clark	20	London
S5	Adams	30	Athens

P

P#	PNAME	COLOR	WEIGHT	CITY
P1	Nut	Red	12.0	London
P2	Bolt	Green	17.0	Paris
P3	Screw	Blue	17.0	Oslo
P4	Screw	Red	14.0	London
P5	Cam	Blue	12.0	Paris
P6	Cog	Red	19.0	London

J

J#	JNAME	CITY
J1	Sorter	Paris
J2	Display	Rome
J3	OCR	Athens
J4	Console	Athens
J5	RAID	London
J6	EDS	Oslo
J7	Tape	London

SPJ

S#	P#	J#	QTY
S1	P1	J1	200
S1	P1	J4	700
S2	P3	J1	400
S2	P3	J2	200
S2	P3	J3	200
S2	P3	J4	500
S2	P3	J5	600
S2	P3	J6	400
S2	P3	J7	800
S2	P5	J2	100
S3	P3	J1	200
S3	P4	J2	500
S4	P6	J3	300
S4	P6	J7	300
S5	P2	J2	200
S5	P2	J4	100
S5	P5	J5	500
S5	P5	J7	100
S5	P6	J2	200
S5	P1	J4	100
S5	P3	J4	200
S5	P4	J4	800
S5	P5	J4	400
S5	P6	J4	500

Fig. 8.1 The suppliers-parts-projects database (sample values)

5- for each supplier, get supplier name and number of parts they supplied if any.

Correct answer:

```
select sname, COUNT(SPJ.p#)
from S left outer join SPJ
on S.s#=SPJ.s#
group by sname
```

incorrect answers:

```
select sname, COUNT(SPJ.p#)
from S right outer join SPJ
on S.s#=SPJ.s#
group by sname
```

```
select sname, COUNT(SPJ.p#)
from S , SPJ
on S.s#=SPJ.s#
group by sname
```

```
select sname, COUNT(SPJ.p#)
from S ,SPJ
on S.s#=SPJ.s#
```

1- 6- Given SPJ schema, Which of the following queries get the names of projects which supplied with parts of weight not less than 14 by suppliers located in London.

Correct answer:

```
select jname
from S, J, P, SPJ
where S.city='London'
and P.weight>= 14
and SPJ.p#=P.p#
and SPJ.j#=J.j#
and SPJ.s#=S.s#
```

incorrect answers:

```
   1- select jname
from S, J, P, SPJ
where S.city='London'
and P.weight>= 14
and SPJ.p#=P.p#
and SPJ.s#=S.s#

////////////////////////////
```

```
   2- select jname
from J, P, SPJ
where S.city='London'
and P.weight>= 14
and SPJ.p#=P.p#
and SPJ.j#=J.j#
////////////////////////////////
   3- select jname
from S, J, P, SPJ
where S.city= London
and P.weight>= 14
and SPJ.p#=P.p#
and SPJ.j#=J.j#
and SPJ.s#=S.s#
```

7- Given SPJ schema, what are the expected output of this query?

```
   select distinct s#
```

```
from S,P,J
where S.city=P.city and P.city=J.city
```

correct answer:

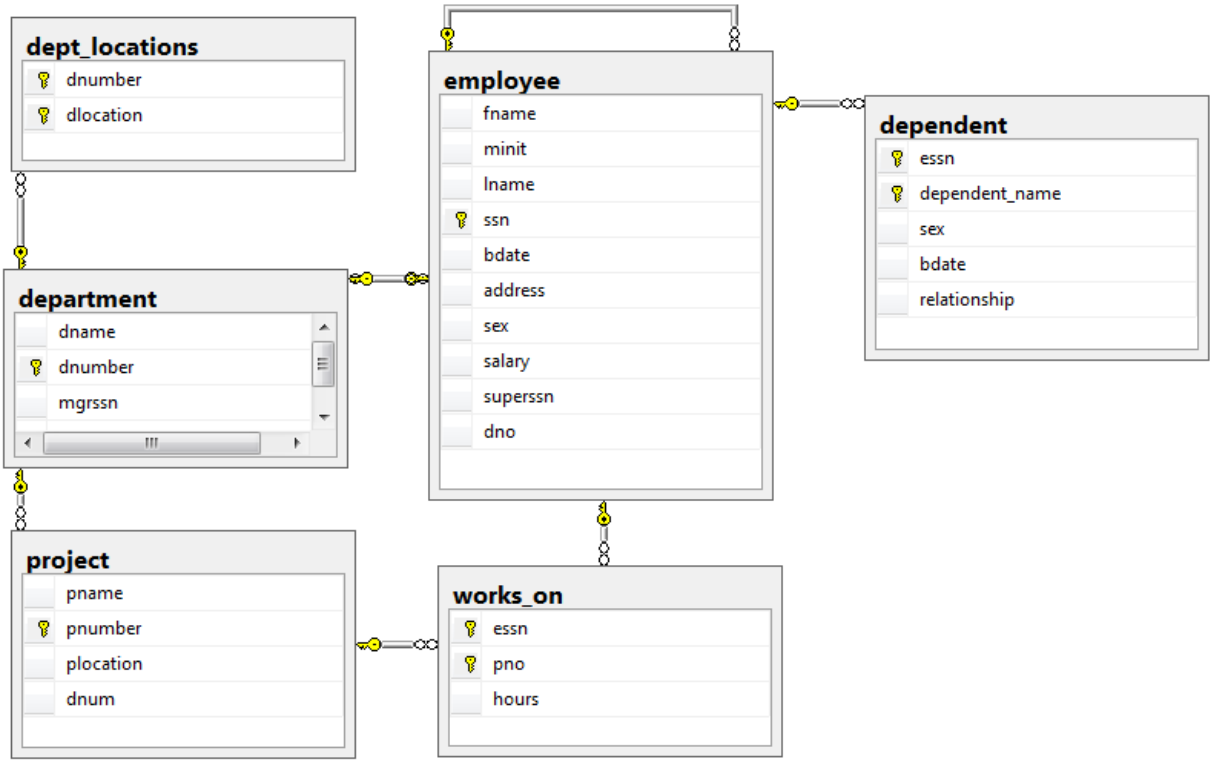
(S1,S2,S3,S4)

Incorrect answers:

(S1,S1,S3,S4)

(S1,S2,S3,S5)

(S1,S2,S3,S5,S4)



8- List each city and number of employees who work in projects in that city but they don't live in it.

```
Select plocation, count(essn)
From project, works_on,employee
Where pnumber=pno and ssn=essn
And address <> plocation
Group by plocation
Incorrect answers:
Select plocation, essn
From project, works_on,employee
Where pnumber=pno and ssn=essn
And address <> plocation
Group by plocation
////////////////////////////////////
Select plocation, count(essn)
From project, works_on,employee
Where pnumber=pno and ssn=essn
```

```
And address = plocation
Group by plocation
////////////////////////////////////
Select plocation, count(essn)
From project, works_on,employee
Where pnumber=pno or ssn=essn
And address <> plocation
Group by plocation
```

9. List the names of all employees who have a dependent with the same first name as themselves

```
Select  fname
From employee e1
Where fname in (select dependent_name
From dependent d
Where e1.ssn=d.essn)
```

```
Incorrect answers:
Select  fname
From employee e1
Where fname = (select dependent_name
From dependent d
      Where e1.ssn=d.essn)
////////////////////////////////////
Select  fname
From employee e1
Where fname = (select dependent_name
From dependent d
)
////////////////////////////////////
Select  fname
From employee e1, dependent d
Where e1.ssn=d.essn or e1.fname=d.dependent_name
```

10-Which of the following queries would show the employees names who have never been supervisor to anyone before.

```
select fname
from employee
except
select e1.fname
from employee e1, employee e2
where e1.superssn=e2.ssn
```

```
select fname
from employee
except
select e1.fname
from employee e1, employee e2
where e1.superssn <> null
```

```
select fname
from employee
except
select e1.fname
from employee e1, employee e2
```

```
where e1.superssn is null


select fname
from employee
where superssn <> null
```

11- Consider the below table.
Table Employee_Info

ID	Department	Name
01	Sales	Mark
02	Human Resources	John
03	Marketing	Suzy
04	Accounting	Adam
05	Engineering	Peter
NULL	NULL	NULL
0	0	0

What is the result of the below query:

select * from Employee_Info
where '0' in (select ID from Employee_Info where ID in (0))
a)

ID	Department	Name
0	0	0

b)

ID	Department	Name
NULL	NULL	NULL

c)

ID	Department	Name
01	Sales	Mark
02	Human Resources	John
03	Marketing	Suzy
04	Accounting	Adam
05	Engineering	Peter
NULL	NULL	NULL
0	0	0

d) None of the above.

12- You want all dates when any employee was hired. Multiple employees were hired on the same date and you want to see the date only once.

Query - 1
Select distinct hiredate

From hr.employee
Order by hiredate;

Query - 2
Select hiredate
From hr.employees
Group by hiredate
Order by hiredate;

Which of the above queries is valid?

A) Query - 1
B) Query - 2
C) Both

13- given northwind schema, which of these queries is correct to get product name and its id ordered by customers their address contains `'Granada'` and contact title is `'Owner'` or `'Marketing Manager'`

Correct answer:

```
select Products.ProductID,ProductName
from dbo.Products,dbo.Orders,dbo.[Order Details],dbo.Customers
where dbo.Customers.CustomerID= dbo.Orders.CustomerID and dbo.Orders.
OrderID=dbo.[Order Details].OrderID and dbo.Products.ProductID=dbo.[Order
Details].ProductID
and Customers.Address like '%Granada%' and(ContactTitle='Owner'or
ContactTitle='Marketing Manager')
```

incorrect answers:

```
select Products.ProductID,ProductName
from dbo.Products,dbo.Orders,dbo.[Order Details],dbo.Customers
where dbo.Customers.CustomerID= dbo.Orders.CustomerID and dbo.Orders.
OrderID=dbo.[Order Details].OrderID and dbo.Products.ProductID=dbo.[Order
Details].ProductID
and Customers.Address like '%Granada%' and ContactTitle='Owner'or
ContactTitle='Marketing Manager'
```

```
//////////////////
```

```
select Products.ProductID,ProductName
from dbo.Products,dbo.Orders,dbo.[Order Details],dbo.Customers
```

```
where dbo.Customers.CustomerID= dbo.Orders.CustomerID and dbo.Orders.
OrderID=dbo.[Order Details].OrderID and dbo.Products.ProductID=dbo.[Order
Details].ProductID
and Customers.Address like %'Granada'% and ContactTitle='Owner'or
ContactTitle='Marketing Manager'

//////////////////////////////////////////

select Products.ProductID,ProductName
from dbo.Products,dbo.Orders,dbo.[Order Details]
where dbo.Orders. OrderID=dbo.[Order Details].OrderID and
dbo.Products.ProductID=dbo.[Order Details].ProductID
and Customers.Address like '%Granada%' and(ContactTitle='Owner'or
ContactTitle='Marketing Manager')

14- given northwind schema, which of the following queries Get the customer
name and title for customers that have not placed any orders.

   a- select c.CustomerID,ContactName,CompanyName
from Customers c
where not exists (select * from orders o where c.CustomerID=o.CustomerID)

   b- select ContactName,CompanyName
from Customers
except
select ContactName,CompanyName
from orders,Customers
where Orders.CustomerID=Customers.CustomerID

   c- select ContactName,CompanyName
from Customers
except
select customerID
from orders
   d- a and b

15- which of the following queris Return a list of distinct customers
(CustomerID,CompanyName)who has orders shipped to UK

   a- select  distinct customers.CustomerID,CompanyName
from dbo.Orders , Customers
where ShipCountry='UK' and Orders.CustomerID=Customers.CustomerID

   b- select c.CustomerID,CompanyName
from Customers c
 where exists (select * from orders where ShipCountry='UK' and
c.CustomerID=Orders.CustomerID)

   c- select  distinct CustomerID,CompanyName
from dbo.Orders , Customers
where ShipCountry='UK' and Orders.CustomerID=Customers.CustomerID
   d- a and b
```

16- Given SPJ schema, which of the following SQL DDL query is correct for declaring P table, and make sure that the default value of color column is Red and all the columns can't be null.

a- create table P
(
p# varchar(5),
pname varchar(20) not null,
color varchar(20) default 'Red',
weight real not null,
city varchar(20) not null,
primary key(p#)
);

b- create table P
(
p# varchar(5),
pname varchar(20) not null,
color varchar(20) default 'Red',
weight real not null,
city varchar(20) not null,
primary key(p#),
);

c- create table P
(
p# varchar(5),
pname varchar(20) not null,
color varchar(20),
weight real not null,
city varchar(20) not null,
primary key(p#)
);

d- None of the above

1- Which of the following statement removes database including its related components? 0.5

A. DROP DATABASE
B. DELETE DATABASE
C. REMOVE DATABASE
D. None of the mentioned

Ans : A

2- Which statement would add a column CGPA to a table Student which is already created 0.5

A. ALTER TABLE Student ADD COLUMN (CGPA NUMBER(3,1));
B. ALTER TABLE Student CGPA NUMBER(3,1);
C. ALTER TABLE Student ADD (CGPA NUMBER(3,1));
D. Both A and C

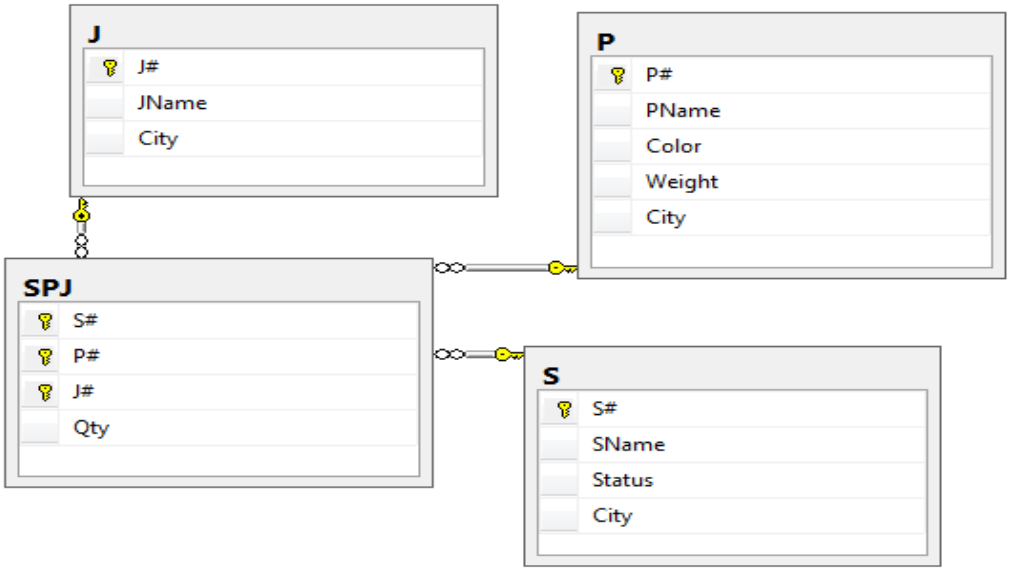
Ans : C

3- Consider we have 30 employees where 20 of them belong to different departments and the rest don't belong to any department. On the other hand, we have 4 departments where each of them have employees assigned to it. How many record will result by performing left outer join between Table Employee and Department? (Employee left join Department) 0.5

10
20
30
40

4- Consider we have 30 employees where 20 of them belong to different departments and the rest don't belong to any department. On the other hand, we have 4 departments where each of them have employees assigned to it. How many record will result by performing right outer join between Table Employee and Department? (Employee right join Department) 0.5

10
20
30
40



S

S#	SNAME	STATUS	CITY
S1	Smith	20	London
S2	Jones	10	Paris
S3	Blake	30	Paris
S4	Clark	20	London
S5	Adams	30	Athens

P

P#	PNAME	COLOR	WEIGHT	CITY
P1	Nut	Red	12.0	London
P2	Bolt	Green	17.0	Paris
P3	Screw	Blue	17.0	Oslo
P4	Screw	Red	14.0	London
P5	Cam	Blue	12.0	Paris
P6	Cog	Red	19.0	London

J

J#	JNAME	CITY
J1	Sorter	Paris
J2	Display	Rome
J3	OCR	Athens
J4	Console	Athens
J5	RAID	London
J6	EDS	Oslo
J7	Tape	London

SPJ

S#	P#	J#	QTY
S1	P1	J1	200
S1	P1	J4	700
S2	P3	J1	400
S2	P3	J2	200
S2	P3	J3	200
S2	P3	J4	500
S2	P3	J5	600
S2	P3	J6	400
S2	P3	J7	800
S2	P5	J2	100
S3	P3	J1	200
S3	P4	J2	500
S4	P6	J3	300
S4	P6	J7	300
S5	P2	J2	200
S5	P2	J4	100
S5	P5	J5	500
S5	P5	J7	100
S5	P6	J2	200
S5	P1	J4	100
S5	P3	J4	200
S5	P4	J4	800
S5	P5	J4	400
S5	P6	J4	500

Fig. 8.1 The suppliers-parts-projects database (sample values)

5- for each supplier, get supplier names and number of project they supplied where supplier and project not located on the same city .

```
select sname , COUNT(SPJ.j#)
from S,SPJ,J
where S.s#=SPJ.s# and SPJ.j#=J.j# and S.city != J.city
group by sname
```

incorrect choices:

```
select sname , COUNT(SPJ.j#)
from S,SPJ,J
where S.s#=SPJ.s# and SPJ.j#=J.j# and S.city != J.city
group by sname
```

```
select sname , COUNT(SPJ.j#)
from S,SPJ,J
where S.s#=SPJ.s# and SPJ.j#=J.j# or S.city != J.city
group by sname
```

```
select sname , COUNT(SPJ.j#)
from S,SPJ,J
where S.s#=SPJ.s# or SPJ.j#=J.j# or S.city != J.city
group by sname
```

6 - Given SPJ schema, Which of the following queries get the names of suppliers who supply parts for projects located in London or Paris.

a-
```
select sname    #correct answer
from S,SPJ,J
where S.s#=SPJ.s# and J.j#=SPJ.J#
and (J.city = 'London'or J.city = 'Paris')
```

b-
```
select sname
from S,SPJ,J
where S.s#=SPJ.s# and J.j#=SPJ.J#
and J.city = 'London'or J.city = 'Paris'
```

c-
```
select sname
from S,SPJ,J
where S.s#=SPJ.s# and J.j#=SPJ.J#
and (J.city = 'London'and J.city = 'Paris')
```

d-
```
select sname
from S,SPJ,J
where S.s#=SPJ.s# and J.j#=SPJ.J#
and (S.city = 'London'or J.city = 'Paris')
```

e-
```
select sname
from S,SPJ
where S.s#=SPJ.s#
and (S.city = 'London'or S.city = 'Paris')
```

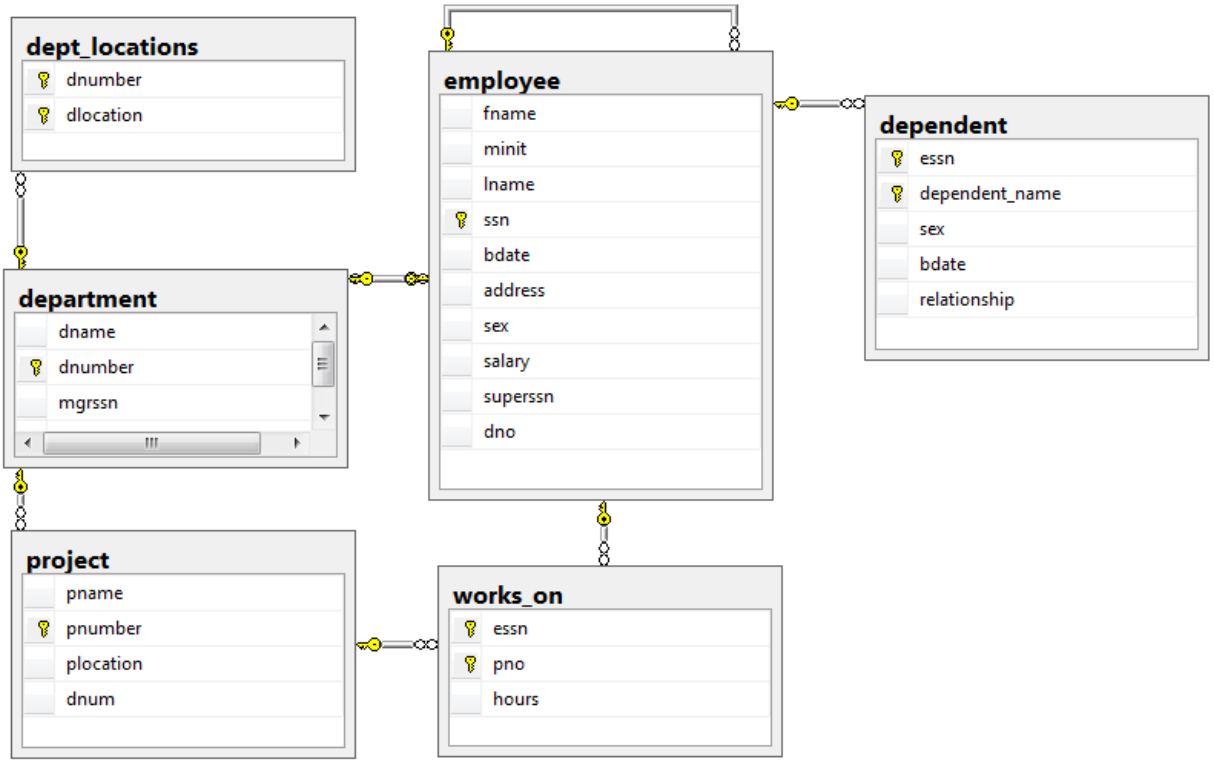
7-Given SPJ schema, which of these sql statements don't violate referential integrity constraint and entity constraint?

1- `insert into SPJ values ('s1','p1','j1',300)`
2- `insert into SPJ values ('s6','p1','j5',300)`
3- `insert into SPJ values ('s2','p9','j5',300)`
4- `insert into SPJ values ('s1','p2','j5',300)// correct answer`

8- Given SPJ schema, what's the correct number of columns and tuples resulting from the following query:

```
select *
   from P,S
   where P.city != S.City
```

Correct Answer : 9 columns, 20 Tuples
Incorrect Answers :
8 columns, 20 Tuples
9 columns, 10 Tuples
8 columns, 18 Tuples



9- For each department whose average employee salary is more than $30,000, retrieve the department name and the number of employees working for that department.

```
Select dname, avg(salary) as avg_salary, count(ssn)as employeecount
   From department, employee
   Where dnumber=dno
   group by dname
   having avg(salary)>30000
```

incorrect choices:

```
Select dname, avg(salary) as avg_salary, count(ssn)as employeecount
From department, employee
Where dnumber=dno
having avg(salary)>30000
```

```
group by dname

////////////////////////////////////////////////

Select dname, avg(salary) as avg_salary, count(ssn)as employeecount
From department, employee
Where dnumber=dno
group by dname
having avg_salary>30000
//////////////////////////////////////////////////////

Select dname, avg(salary) as avg_salary, count(ssn)as employeecount
From department, employee
Where dnumber=dno
      group by dname
      having count(ssn)>30000
```

10- Consider the below table:
Employee_Info

ID	Department	Name
01	Sales	Mark
02	Human Resources	John
03	Marketing	Suzy
04	Accounting	Adam
05	Engineering	Peter
NULL	NULL	NULL

What will be the result of following query:

SELECT ID, Department, Name
FROM Employee_Info
WHERE EXISTS (SELECT NULL)
a)

ID	Department	Name
01	Sales	Mark
02	Human Resources	John
03	Marketing	Suzy
04	Accounting	Adam
05	Engineering	Peter

b) Error Message.
c)

ID	Department	Name
NULL	NULL	NULL

d)

ID	Department	Name
01	Sales	Mark
02	Human Resources	John
03	Marketing	Suzy
04	Accounting	Adam
05	Engineering	Peter
NULL	NULL	NULL

11-You need to display the names and job IDs of those employees who currently have a job title that is the same as their previous one. Which of the following queries will work?

a) SELECT employee_id , job_id, first_name, last_name
FROM employees
UNION
SELECT employee_id , job_id, first_name, last_name
FROM job_history;

b) SELECT employee_id , job_id, first_name, last_name
FROM employees
INTERSECT
SELECT employee_id , job_id, first_name, last_name
FROM job_history;

c) SELECT employee_id , job_id, first_name, last_name
FROM employees
UNION ALL
SELECT employee_id , job_id, first_name, last_name
FROM job_history;

d) SELECT employee_id , job_id, first_name, last_name
FROM employees
Except
SELECT employee_id , job_id, first_name, last_name
FROM job_history;

12- Given northwind schema , Get the distinct products categories shipped by 'United Package'.

Correct answer:

```
select distinct CategoryName
from dbo.Products,dbo.Orders,dbo.[Order Details],dbo.Shippers,dbo.Categories
where dbo.Categories.CategoryID=dbo.Products.CategoryID and
dbo.Orders.OrderID=dbo.[Order Details].OrderID and
dbo.Products.ProductID=dbo.[Order Details].ProductID and dbo.Orders.ShipVia=
dbo.Shippers.ShipperID
```

```
 and dbo.Shippers.CompanyName='United Package'
```

incorrect answers:

```
select distinct CategoryName
from dbo.Products,dbo.Orders,dbo.[Order Details],dbo.Shippers,dbo.Categories
where dbo.Categories.CategoryID=dbo.Products.CategoryID and
dbo.Orders.OrderID=dbo.[Order Details].OrderID and
dbo.Products.ProductID=dbo.[Order Details].ProductID
and dbo.Orders.ShipVia= dbo.Shippers.ShipperID
or dbo.Shippers.CompanyName='United Package'

select distinct CategoryName
from dbo.Products,dbo.Orders,dbo.[Order Details],dbo.Shippers,dbo.Categories
where dbo.Categories.CategoryID=dbo.Products.CategoryID or
dbo.Orders.OrderID=dbo.[Order Details].OrderID or
dbo.Products.ProductID=dbo.[Order Details].ProductID
or dbo.Orders.ShipVia= dbo.Shippers.ShipperID
and dbo.Shippers.CompanyName='United Package'

select distinct CategoryName
from dbo.Products,dbo.Orders,dbo.[Order Details],dbo.Shippers,dbo.Categories
where dbo.Categories.CategoryID=dbo.Products.CategoryID and
(dbo.Orders.OrderID=dbo.[Order Details].OrderID or
dbo.Products.ProductID=dbo.[Order Details].ProductID
or dbo.Orders.ShipVia= dbo.Shippers.ShipperID)
and dbo.Shippers.CompanyName='United Package'

select distinct CategoryName
from dbo.Products,dbo.Orders,dbo.[Order Details],dbo.Shippers,dbo.Categories
where dbo.Categories.CategoryID=dbo.Products.CategoryID and
(dbo.Orders.OrderID=dbo.[Order Details].OrderID or
dbo.Products.ProductID=dbo.[Order Details].ProductID
or dbo.Orders.ShipVia= dbo.Shippers.ShipperID)
 and dbo.Shippers.CompanyName='United Package'
```

13-Given SPJ schema, which of the following SQL DDL query is correct for declaring S table, you must ensure that the status column can't be below 10 and can't be above 40 and all the columns can't be null.

```
   a- create table S
(
s# varchar(5),
sname varchar(20) not null,
status int not null check (status >= 10 and status <= 40),
city varchar(20) not null,
primary key(s#)

);
```

```
   b- create table S
(
s# varchar(5),
sname varchar(20) not null,
status int not null check (status >= 10 and status <= 40),
```

```
city varchar(20) not null,

);


c-create table S
(
s# varchar(5),
sname varchar(20) not null,
status int not null check (status >= 10 and status <= 40),
city varchar(20) not null,
primary key(s#),
);
```

d- none of the above

14- which of the following queris Return a list of distinct customers (CustomerID,CompanyName)who has orders shipped to UK

```
a- select  distinct customers.CustomerID,CompanyName
from dbo.Orders , Customers
where ShipCountry='UK' and Orders.CustomerID=Customers.CustomerID

b- select c.CustomerID,CompanyName
   from Customers c
    where exists (select * from orders where ShipCountry='UK')

c- select  distinct CustomerID,CompanyName
    from dbo.Orders , Customers
    where ShipCountry='UK' and Orders.CustomerID=Customers.CustomerID
d- a and b
```