CREATE TABLE IF NOT EXISTS Supplier  
(  
 SNr VARCHAR(4) CHECK (SNr REGEXP 'S[0**-**9]{3}' ),  
 SName VARCHAR(50) UNIQUE,  
 DateofBusiness DATE,  
 City VARCHAR(50) CHECK ( City REGEXP ('^[A-Z]')),  
 CONSTRAINT spplr\_pky PRIMARY KEY (SNr)  
  
);  
  
CREATE TABLE IF NOT EXISTS Article  
(  
 ANr VARCHAR(4) CHECK (ANr REGEXP 'A[0**-**9]{2}' ),  
 AName VARCHAR(50) UNIQUE,  
 Color VARCHAR(10),  
 Weight INT,  
 City VARCHAR(50),  
 CONSTRAINT artcl\_pky PRIMARY KEY (ANr),  
 CONSTRAINT artcl\_clr\_chck CHECK (Color IN ('WHITE', 'BLACK', 'RED'))  
);  
  
CREATE TABLE IF NOT EXISTS Delivery  
(  
 SNr VARCHAR(4),  
 ANr VARCHAR(4),  
 Qty INT,  
 CONSTRAINT artcl\_fky FOREIGN KEY (ANr) REFERENCES Article (ANr),  
 CONSTRAINT spplr\_fky FOREIGN KEY (SNr) REFERENCES Supplier (SNr),  
 CONSTRAINT dlvry\_pky PRIMARY KEY (SNr, ANr)  
);  
  
INSERT INTO Supplier  
VALUES ('S001', 'KENSTAR', STR\_TO\_DATE('01/01/2002', '%d/%m/%Y'), 'Chennai'),  
 ('S002', 'SAMSUNG', STR\_TO\_DATE('12/10/2001', '%d/%m/%Y'), 'Cbe'),  
 ('S003', 'ELGI', STR\_TO\_DATE('20/02/1999', '%d/%m/%Y'), 'Cbe'),  
 ('S004', 'PHILIPS', STR\_TO\_DATE('10/12/1999', '%d/%m/%Y'), 'Delhi');  
  
INSERT INTO Article  
VALUES ('A01', 'MOBILE', 'BLACK', 100, 'Cbe'),  
 ('A02', 'MICROWAVE', 'WHITE', 1500, 'Bombay'),  
 ('A03', 'AIR COOLER', 'WHITE', 2000, 'Cbe'),  
 ('A04', 'REFRIGIRATOR', 'RED', 10000, 'Delhi');  
  
INSERT INTO Delivery  
VALUES ('S003', 'A01', 1000),  
 ('S003', 'A02', 500),  
 ('S004', 'A03', 10),  
 ('S003', 'A03', 25),  
 ('S002', 'A04', 50),  
 ('S002', 'A02', 200),  
 ('S001', 'A02', 55),  
 ('S001', 'A04', 78);

show tables;  
  
  
## Ques\_No :1  
SELECT SNr, ANr  
FROM Delivery  
WHERE SNr IN (SELECT SNr FROM Delivery GROUP BY SNr HAVING COUNT(\*) > 1);  
  
## Ques\_No :2  
SELECT ANr, Qty  
FROM Delivery  
WHERE ANr IN (SELECT ANr  
 FROM (SELECT ANr, RANK() OVER (ORDER BY City) AS ranking FROM Article) selection  
 WHERE ranking = 1);  
  
## Ques\_No :3  
SELECT \*  
FROM Supplier AS S  
WHERE SNr NOT IN (  
 SELECT DISTINCT SNr  
 FROM (SELECT SNr, ANr  
 FROM (SELECT DISTINCT ANr  
 FROM Delivery  
 WHERE SNr IN (SELECT DISTINCT SNr  
 FROM Delivery  
 INNER JOIN Article ON Delivery.ANr = Article.ANr AND Article.Color = 'RED')) AS Cond  
 CROSS JOIN (SELECT DISTINCT SNr FROM Delivery) AS Suppliers) AS Result  
 WHERE (SNr, ANr) NOT IN (SELECT SNr, ANr FROM Delivery));  
  
## Ques\_No :4  
SELECT ANr  
FROM Delivery  
 INNER JOIN Article A USING (ANr)  
 INNER JOIN Supplier S USING (SNr)  
WHERE A.City = 'Cbe'  
 AND S.City = 'Cbe';  
  
  
## Ques\_No :6  
ALTER TABLE Article  
 DROP CONSTRAINT article\_color\_check;  
  
ALTER TABLE Article  
 ADD CONSTRAINT article\_color\_check CHECK (Color IN ('WHITE', 'BLACK', 'RED', 'GREEN'));  
  
INSERT INTO Article VALUE ('A05', 'WASHING MACHINE', 'GREEN', 20000, 'Cbe');  
  
## Ques\_No :7  
SELECT SNr, DateofBusiness  
FROM Delivery  
 INNER JOIN Article A USING (ANr)  
 INNER JOIN Supplier S USING (SNr)  
WHERE A.Color = 'BLACK';  
  
## Ques\_No :8  
SELECT SName  
FROM Supplier  
WHERE SNr IN (SELECT SNr  
 FROM (SELECT SNr, RANK() OVER (ORDER BY COUNT(DISTINCT ANr) DESC) AS ranking  
 FROM Delivery  
 GROUP BY SNr) selection  
 WHERE ranking = 1);  
  
## Ques\_No :9  
SELECT SName  
FROM Supplier  
WHERE SNr IN (SELECT SNr  
 FROM (SELECT SNr, RANK() OVER (ORDER BY SUM(Qty) DESC) AS ranking  
 FROM Delivery  
 GROUP BY SNr) selection  
 WHERE ranking = 1);  
  
## Ques\_No :10  
SELECT SName  
FROM Supplier  
WHERE SNr IN (SELECT SNr  
 FROM (SELECT SNr, RANK() OVER (ORDER BY SUM(Qty) DESC) AS ranking  
 FROM Delivery  
 GROUP BY SNr) selection  
 WHERE ranking = 2);  
  
## Ques\_No :11  
SELECT \*  
FROM Delivery  
WHERE SNr IN (SELECT SNr FROM Supplier WHERE City IN (SELECT City FROM Supplier GROUP BY City HAVING COUNT(City) > 1));  
  
  
## Ques\_No :12  
SELECT \*  
FROM Delivery  
WHERE SNr IN (SELECT SNr FROM Supplier WHERE City IN (SELECT City FROM Supplier GROUP BY City HAVING COUNT(City) = 1));  
  
## Ques\_No :13  
SELECT SNR, DateofBusiness  
FROM Supplier  
WHERE SNr IN (SELECT SNr FROM Delivery GROUP BY SNr HAVING SUM(Qty) = 250);  
  
## Ques\_No :14  
SELECT A.\*  
FROM Delivery  
 INNER JOIN Article A USING (ANr)  
 INNER JOIN Supplier S USING (SNr)  
WHERE S.SName = 'ELGI';  
  
## Ques\_No :15  
SELECT A.\*  
FROM Article A  
WHERE A.ANr IN (SELECT ANr  
 FROM (SELECT ANr, RANK() OVER (ORDER BY SUM(Qty) DESC) AS ranking  
 FROM Delivery  
 GROUP BY ANr) selection  
 WHERE ranking = 1);  
  
## Ques\_No :16  
SELECT DISTINCT S.City  
FROM Delivery  
 INNER JOIN Article A USING (ANr)  
 INNER JOIN Supplier S USING (SNr)  
WHERE A.AName = 'MICROWAVE';  
  
## Ques\_No :17  
SELECT S.City  
FROM Delivery  
 INNER JOIN Article A USING (ANr)  
 INNER JOIN Supplier S USING (SNr)  
WHERE A.AName = 'MICROWAVE'  
GROUP BY S.City  
HAVING COUNT(\*) > 1;  
  
## Ques\_No :18  
SELECT SNr, AName, Weight, Color  
FROM Delivery  
 INNER JOIN Article A USING (ANr)  
 INNER JOIN Supplier S USING (SNr)  
WHERE (A.Color, SNr) IN (  
 SELECT A.Color, SNr  
 FROM Delivery  
 INNER JOIN Article A USING (ANr)  
 INNER JOIN Supplier S USING (SNr)  
 GROUP BY A.Color, SNr  
 HAVING COUNT(SNr) > 1)  
ORDER BY SNr;  
  
## Ques\_No :19  
SELECT \*  
FROM Delivery  
 INNER JOIN Supplier S USING (SNr)  
 INNER JOIN Article A USING (ANr)  
ORDER BY SNr;  
  
## Ques\_No :20  
SELECT A.\*  
FROM Delivery  
 INNER JOIN Article A USING (ANr)  
ORDER BY SNr;  
  
## Ques\_No :21  
SELECT A.\*  
FROM Delivery  
 INNER JOIN Article A USING (ANr)  
WHERE SNr = (SELECT SNr FROM Supplier ORDER BY SName DESC LIMIT 1);  
  
## Ques\_No :22  
SELECT DISTINCT SName  
FROM Delivery  
 INNER JOIN Supplier S USING (SNr)  
 INNER JOIN Article A USING (ANr)  
WHERE A.AName = 'MICROWAVE';  
  
## Ques\_No :23  
SELECT SName  
FROM Supplier  
WHERE SNr NOT IN (SELECT DISTINCT SNr  
 FROM Delivery  
 INNER JOIN Article ON Delivery.ANr = Article.ANr AND Article.AName = 'MOBILE');  
  
  
## Ques\_No :24  
SELECT DISTINCT SName  
FROM Delivery  
 INNER JOIN Supplier S USING (SNr)  
 INNER JOIN Article A USING (ANr)  
GROUP BY SName  
HAVING COUNT(DISTINCT ANr) = (SELECT COUNT(\*) FROM Article);  
  
  
## Ques\_No :25  
SELECT DISTINCT SName  
FROM Supplier  
 JOIN Delivery USING (SNr)  
WHERE ANr IN (SELECT ANr FROM Delivery WHERE SNr = 'S002');  
  
## Ques\_No :26  
SELECT SNr, City  
FROM Supplier  
WHERE City IN (Select City FROM Supplier GROUP BY City HAVING COUNT(\*) > 1);  
  
## Ques\_No :27  
SELECT ANr  
FROM Article  
WHERE ANr NOT IN (SELECT DISTINCT D.ANr  
 FROM Supplier  
 INNER JOIN Delivery D on Supplier.SNr = D.SNr AND Supplier.City = 'Delhi');  
  
## Ques\_No :28  
SELECT SNr  
FROM Supplier  
WHERE City = (Select City FROM Supplier ORDER BY City LIMIT 1);  
  
## Ques\_No :29  
SELECT ANr  
FROM Article  
WHERE Weight > 2000  
 AND ANr IN (SELECT ANr FROM Delivery GROUP BY ANr HAVING COUNT(ANr) IN (SELECT COUNT(SNr) FROM Supplier));  
  
## Ques\_No :30  
SELECT AName  
FROM Article  
 INNER JOIN Delivery USING (ANr)  
WHERE ANr NOT IN (SELECT DISTINCT ANr FROM Delivery WHERE SNr != 'S001');