1)

```sql
CREATE TABLE STUDENT(

USN VARCHAR(10) PRIMARY KEY,

SNAME VARCHAR(25),

ADDRESS VARCHAR(25),

PHONE integer(10),

GENDER CHAR(1));

CREATE TABLE SEMSEC(

SSID VARCHAR(5) PRIMARY KEY,

SEM integer(2),

SEC CHAR(1));


CREATE TABLE CLASS(

USN VARCHAR(10),

SSID VARCHAR(5),

PRIMARY KEY(USN,SSID),

FOREIGN KEY(USN) REFERENCES STUDENT(USN),

FOREIGN KEY(SSID) REFERENCES SEMSEC(SSID));


CREATE TABLE SUBJECT(

SUBCODE VARCHAR(8),

TITLE VARCHAR(20),

SEM integer(2),

CREDITS integer(2),

PRIMARY KEY(SUBCODE));


CREATE TABLE IAMARKS(

USN VARCHAR(10),

SUBCODE VARCHAR(8),
```

SSID VARCHAR(5),

TEST1 integer(2),

TEST2 integer(2),

TEST3 integer(2),

FINALIA integer(2),

PRIMARY KEY(SUBCODE,USN,SSID),

FOREIGN KEY(USN) REFERENCES STUDENT(USN),

FOREIGN KEY(SUBCODE) REFERENCES SUBJECT(SUBCODE),

FOREIGN KEY(SSID) REFERENCES SEMSEC(SSID));

2)

 into STUDENT VALUES ('1RN13CS020','AKSHAY','BELAGAVI', 8877881,'M');

INSERT INTO STUDENT VALUES ('1RN13CS062','SANDHYA','BENGALURU',7722829,'F');

INSERT INTO STUDENT VALUES ('1RN13CS091','TEESHA','BENGALURU', 7712312,'F');

INSERT INTO STUDENT VALUES ('1RN13CS066','SUPRIYA','MANGALURU',8877882,'F');

INSERT INTO STUDENT VALUES ('1RN14CS010','ABHAY','BENGALURU', 9900211,'M');

INSERT INTO STUDENT VALUES ('1RN14CS032','BHASKAR','BENGALURU',9923219,'M');

INSERT INTO STUDENT VALUES ('1RN14CS025','ASMI','BENGALURU', 7894737,'F');

INSERT INTO STUDENT VALUES ('1RN15CS011','AJAY','TUMKUR', 9845091,'M');

INSERT INTO STUDENT VALUES ('1RN15CS029','CHITRA','DAVANGERE', 7696772,'F');

INSERT INTO STUDENT VALUES ('1RN15CS045','JEEVA','BELLARY', 9944850,'M');

INSERT INTO STUDENT VALUES ('1RN15CS091','SANTOSH','MANGALURU',8812332,'M');

INSERT INTO STUDENT VALUES ('1RN16CS045','ISMAIL','KALBURGI', 9900232,'M');

INSERT INTO STUDENT VALUES ('1RN16CS088','SAMEERA','SHIMOGA', 9905542,'F');

INSERT INTO STUDENT VALUES ('1RN16CS122','VINAYAKA','CHIKAMAGALUR', 8800880,'M');

INSERT INTO SEMSEC VALUES ('CSE8A', 8,'A');

INSERT INTO SEMSEC VALUES ('CSE8B', 8,'B');

INSERT INTO SEMSEC VALUES ('CSE8C', 8,'C');

INSERT INTO SEMSEC VALUES ('CSE7A', 7,'A');

INSERT INTO SEMSEC VALUES ('CSE7B', 7,'B');

INSERT INTO SEMSEC VALUES ('CSE7C', 7,'C');

INSERT INTO SEMSEC VALUES ('CSE6A', 6,'A');

INSERT INTO SEMSEC VALUES ('CSE6B', 6,'B');

INSERT INTO SEMSEC VALUES ('CSE6C', 6,'C');

INSERT INTO SEMSEC VALUES ('CSE5A', 5,'A');

INSERT INTO SEMSEC VALUES ('CSE5B', 5,'B'); INSERT

INTO SEMSEC VALUES ('CSE5C', 5,'C');

INSERT INTO SEMSEC VALUES ('CSE4A', 4,'A');

INSERT INTO SEMSEC VALUES ('CSE4B', 4,'B'); INSERT

INTO SEMSEC VALUES ('CSE4C', 4,'C');

INSERT INTO SEMSEC VALUES ('CSE3A', 3,'A');

INSERT INTO SEMSEC VALUES ('CSE3B', 3,'B');

INSERT INTO SEMSEC VALUES ('CSE3C', 3,'C');

INSERT INTO SEMSEC VALUES ('CSE2A', 2,'A');

INSERT INTO SEMSEC VALUES ('CSE2B', 2,'B');

INSERT INTO SEMSEC VALUES ('CSE2C', 2,'C');

INSERT INTO SEMSEC VALUES ('CSE1A', 1,'A');

INSERT INTO SEMSEC VALUES ('CSE1B', 1,'B');

INSERT INTO SEMSEC VALUES ('CSE1C', 1,'C');

INSERT INTO CLASS VALUES ('1RN13CS020','CSE8A');

INSERT INTO CLASS VALUES ('1RN13CS062','CSE8A'); INSERT

INTO CLASS VALUES ('1RN13CS066','CSE8B'); INSERT INTO

CLASS VALUES ('1RN13CS091','CSE8C'); INSERT INTO CLASS

VALUES ('1RN14CS010','CSE7A');

INSERT INTO CLASS VALUES ('1RN14CS025','CSE7A');

INSERT INTO CLASS VALUES ('1RN14CS032','CSE7A');

INSERT INTO CLASS VALUES ('1RN15CS011','CSE4A');

INSERT INTO CLASS VALUES ('1RN15CS029','CSE4A');

INSERT INTO CLASS VALUES ('1RN15CS045','CSE4B'); INSERT INTO CLASS VALUES ('1RN15CS091','CSE4C'); INSERT INTO CLASS VALUES ('1RN16CS045','CSE3A'); INSERT INTO CLASS VALUES ('1RN16CS088','CSE3B'); INSERT INTO CLASS VALUES ('1RN16CS122','CSE3C');

INSERT INTO SUBJECT VALUES ('10CS81','ACA', 8, 4);

INSERT INTO SUBJECT VALUES ('10CS82','SSM', 8, 4);

INSERT INTO SUBJECT VALUES ('10CS83','NM', 8, 4);

INSERT INTO SUBJECT VALUES ('10CS84','CC', 8, 4);

INSERT INTO SUBJECT VALUES ('10CS85','PW', 8, 4);

INSERT INTO SUBJECT VALUES ('10CS71','OOAD', 7, 4);

INSERT INTO SUBJECT VALUES ('10CS72','ECS', 7, 4);

INSERT INTO SUBJECT VALUES ('10CS73','PTW', 7, 4);

INSERT INTO SUBJECT VALUES ('10CS74','DWDM', 7, 4);

INSERT INTO SUBJECT VALUES ('10CS75','JAVA', 7, 4);

INSERT INTO SUBJECT VALUES ('10CS76','SAN', 7, 4);

INSERT INTO SUBJECT VALUES ('15CS51','ME', 5, 4);

INSERT INTO SUBJECT VALUES ('15CS52','CN', 5, 4);

INSERT INTO SUBJECT VALUES ('15CS53','DBMS', 5, 4);

INSERT INTO SUBJECT VALUES ('15CS54','ATC', 5, 4);

INSERT INTO SUBJECT VALUES ('15CS55','JAVA', 5, 3);

INSERT INTO SUBJECT VALUES ('15CS56','AI', 5, 3);

INSERT INTO SUBJECT VALUES ('15CS41','M4', 4, 4);

INSERT INTO SUBJECT VALUES ('15CS42','SE', 4, 4);

INSERT INTO SUBJECT VALUES ('15CS43','DAA', 4, 4);

INSERT INTO SUBJECT VALUES ('15CS44','MPMC', 4, 4);

INSERT INTO SUBJECT VALUES ('15CS45','OOC', 4, 3);

INSERT INTO SUBJECT VALUES ('15CS46','DC', 4, 3);

INSERT INTO SUBJECT VALUES ('15CS31','M3', 3, 4);

INSERT INTO SUBJECT VALUES ('15CS32','ADE', 3, 4); INSERT INTO SUBJECT VALUES ('15CS33','DSA', 3, 4); INSERT INTO SUBJECT VALUES ('15CS34','CO', 3, 4);

INSERT INTO SUBJECT VALUES ('15CS35','USP', 3, 3);

INSERT INTO SUBJECT VALUES ('15CS36','DMS', 3, 3);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1RN13CS091','10CS81','CSE8C', 15, 16, 18);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1RN13CS091','10CS82','CSE8C', 12, 19, 14);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1RN13CS091','10CS83','CSE8C', 19, 15, 20);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1RN13CS091','10CS84','CSE8C', 20, 16, 19);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES ('1RN13CS091','10CS85','CSE8C', 15, 15, 12);

3)

SELECT S.*, SS.SEM, SS.SEC

FROM STUDENT S, SEMSEC SS, CLASS C

WHERE S.USN = C.USN AND

SS.SSID = C.SSID AND

SS.SEM = 4 AND SS.Sec='C';

4)

SELECT SS.SEM, SS.SEC, S.GENDER, COUNT (S.GENDER) AS COUNT

FROM STUDENT S, SEMSEC SS, CLASS C

WHERE S.USN = C.USN AND

SS.SSID = C.SSID

GROUP BY SS.SEM, SS.SEC, S.GENDER

ORDER BY SEM;

5)

CREATE VIEW STU_TEST1_MARKS_VIEW

AS

SELECT TEST1, SUBCODE

FROM IAMARKS

WHERE USN = '1RN13CS091';

6)

```
update IAMARKS set FINALIA=((TEST1+TEST2+TEST3)-LEAST(TEST1,TEST2,TEST3))/2;
```

7)

```
SELECT S.USN,S.SNAME,S.ADDRESS,S.PHONE,S.GENDER,
(CASE
WHEN IA.FINALIA BETWEEN 17 AND 20 THEN 'OUTSTANDING'
WHEN IA.FINALIA BETWEEN 12 AND 16 THEN 'AVERAGE'
ELSE 'WEAK'
END) AS CAT
FROM STUDENT S, SEMSEC SS, IAMARKS IA, SUBJECT SUB
WHERE S.USN = IA.USN AND
SS.SSID = IA.SSID AND
SUB.SUBCODE = IA.SUBCODE AND
SUB.SEM = 8;
```

```
MariaDB [clg]> select * from CLASS;
+------------+-------+
| USN        | SSID  |
+------------+-------+
| 1RN13CS020 | CSE8A |
| 1RN13CS062 | CSE8A |
| 1RN13CS066 | CSE8B |
| 1RN13CS091 | CSE8C |
| 1RN14CS010 | CSE7A |
| 1RN14CS025 | CSE7A |
| 1RN14CS032 | CSE7A |
| 1RN15CS011 | CSE4A |
| 1RN15CS029 | CSE4A |
| 1RN15CS045 | CSE4B |
| 1RN15CS091 | CSE4C |
| 1RN16CS045 | CSE3A |
| 1RN16CS088 | CSE3B |
| 1RN16CS122 | CSE3C |
+------------+-------+
14 rows in set (0.003 sec)
```

```
MariaDB [clg]> SELECT * FROM STUDENT;
+------------+----------+--------------+----------+--------+
| USN        | SNAME    | ADDRESS      | PHONE    | GENDER |
+------------+----------+--------------+----------+--------+
| 1RN13CS020 | AKSHAY   | BELAGAVI     | 8877881  | M      |
| 1RN13CS062 | SANDHYA  | BENGALURU    | 7722829  | F      |
| 1RN13CS066 | SUPRIYA  | MANGALURU    | 8877882  | F      |
| 1RN13CS091 | TEESHA   | BENGALURU    | 7712312  | F      |
| 1RN14CS010 | ABHAY    | BENGALURU    | 9900211  | M      |
| 1RN14CS025 | ASMI     | BENGALURU    | 7894737  | F      |
| 1RN14CS032 | BHASKAR  | BENGALURU    | 9923219  | M      |
| 1RN15CS011 | AJAY     | TUMKUR       | 9845091  | M      |
| 1RN15CS029 | CHITRA   | DAVANGERE    | 7696772  | F      |
| 1RN15CS045 | JEEVA    | BELLARY      | 9944850  | M      |
| 1RN15CS091 | SANTOSH  | MANGALURU    | 8812332  | M      |
| 1RN16CS045 | ISMAIL   | KALBURGI     | 9900232  | M      |
| 1RN16CS088 | SAMEERA  | SHIMOGA      | 9905542  | F      |
| 1RN16CS122 | VINAYAKA | CHIKAMAGALUR | 8800880  | M      |
+------------+----------+--------------+----------+--------+
14 rows in set (0.002 sec)
```

```
MariaDB [clg]> SELECT * FROM IAMARKS;
+------------+---------+-------+-------+-------+-------+---------+
| USN        | SUBCODE | SSID  | TEST1 | TEST2 | TEST3 | FINALIA |
+------------+---------+-------+-------+-------+-------+---------+
| 1RN13CS091 | 10CS81  | CSE8C |    15 |    16 |    18 |    NULL |
| 1RN13CS091 | 10CS82  | CSE8C |    12 |    19 |    14 |    NULL |
| 1RN13CS091 | 10CS83  | CSE8C |    19 |    15 |    20 |    NULL |
| 1RN13CS091 | 10CS84  | CSE8C |    20 |    16 |    19 |    NULL |
| 1RN13CS091 | 10CS85  | CSE8C |    15 |    15 |    12 |    NULL |
+------------+---------+-------+-------+-------+-------+---------+
5 rows in set (0.005 sec)
```

```
MariaDB [clg]> SELECT * FROM SEMSEC;
+-------+-------+-------+
| SSID  | SEM   | SEC   |
+-------+-------+-------+
| CSE1A |     1 | A     |
| CSE1B |     1 | B     |
| CSE1C |     1 | C     |
| CSE2A |     2 | A     |
| CSE2B |     2 | B     |
| CSE2C |     2 | C     |
| CSE3A |     3 | A     |
| CSE3B |     3 | B     |
| CSE3C |     3 | C     |
| CSE4A |     4 | A     |
| CSE4B |     4 | B     |
| CSE4C |     4 | C     |
| CSE5A |     5 | A     |
| CSE5B |     5 | B     |
| CSE5C |     5 | C     |
| CSE6A |     6 | A     |
| CSE6B |     6 | B     |
| CSE6C |     6 | C     |
| CSE7A |     7 | A     |
| CSE7B |     7 | B     |
| CSE7C |     7 | C     |
| CSE8A |     8 | A     |
| CSE8B |     8 | B     |
| CSE8C |     8 | C     |
+-------+-------+-------+
24 rows in set (0.002 sec)
```

```
MariaDB [clg]> SELECT * FROM SUBJECT;
+---------+-------+------+---------+
| SUBCODE | TITLE | SEM  | CREDITS |
+---------+-------+------+---------+
| 10CS71  | OOAD  |    7 |       4 |
| 10CS72  | ECS   |    7 |       4 |
| 10CS73  | PTW   |    7 |       4 |
| 10CS74  | DWDM  |    7 |       4 |
| 10CS75  | JAVA  |    7 |       4 |
| 10CS76  | SAN   |    7 |       4 |
| 10CS81  | ACA   |    8 |       4 |
| 10CS82  | SSM   |    8 |       4 |
| 10CS83  | NM    |    8 |       4 |
| 10CS84  | CC    |    8 |       4 |
| 10CS85  | PW    |    8 |       4 |
| 15CS31  | M3    |    3 |       4 |
| 15CS32  | ADE   |    3 |       4 |
| 15CS33  | DSA   |    3 |       4 |
| 15CS34  | CO    |    3 |       4 |
| 15CS35  | USP   |    3 |       3 |
| 15CS36  | DMS   |    3 |       3 |
| 15CS41  | M4    |    4 |       4 |
| 15CS42  | SE    |    4 |       4 |
| 15CS43  | DAA   |    4 |       4 |
| 15CS44  | MPMC  |    4 |       4 |
| 15CS45  | OOC   |    4 |       3 |
| 15CS46  | DC    |    4 |       3 |
| 15CS51  | ME    |    5 |       4 |
| 15CS52  | CN    |    5 |       4 |
| 15CS53  | DBMS  |    5 |       4 |
| 15CS54  | ATC   |    5 |       4 |
| 15CS55  | JAVA  |    5 |       3 |
| 15CS56  | AI    |    5 |       3 |
+---------+-------+------+---------+
29 rows in set (0.004 sec)
```

```
MariaDB [clg]> SELECT S.*, SS.SEM, SS.SEC
    -> FROM STUDENT S, SEMSEC SS, CLASS C
    -> WHERE S.USN = C.USN AND
    -> SS.SSID = C.SSID AND
    -> SS.SEM = 4 AND SS.SEc='C';
+------------+---------+-----------+---------+--------+------+------+
| USN        | SNAME   | ADDRESS   | PHONE   | GENDER | SEM  | SEC  |
+------------+---------+-----------+---------+--------+------+------+
| 1RN15CS091 | SANTOSH | MANGALURU | 8812332 | M      |    4 | C    |
+------------+---------+-----------+---------+--------+------+------+
1 row in set (0.040 sec)
```

```
MariaDB [clg]> SELECT SS.SEM, SS.SEC, S.GENDER, COUNT (S.GENDER) AS COUNT
    -> FROM STUDENT S, SEMSEC SS, CLASS C
    -> WHERE S.USN = C.USN AND
    -> SS.SSID = C.SSID
    -> GROUP BY SS.SEM, SS.SEC, S.GENDER
    -> ORDER BY SEM;
+------+------+--------+-------+
| SEM  | SEC  | GENDER | COUNT |
+------+------+--------+-------+
|    3 | A    | M      |     1 |
|    3 | B    | F      |     1 |
|    3 | C    | M      |     1 |
|    4 | A    | F      |     1 |
|    4 | A    | M      |     1 |
|    4 | B    | M      |     1 |
|    4 | C    | M      |     1 |
|    7 | A    | F      |     1 |
|    7 | A    | M      |     2 |
|    8 | A    | F      |     1 |
|    8 | A    | M      |     1 |
|    8 | B    | F      |     1 |
|    8 | C    | F      |     1 |
+------+------+--------+-------+
```

```
MariaDB [clg]> CREATE VIEW STU_TEST1_MARKS_VIEW
    -> AS
    -> SELECT TEST1, SUBCODE
    -> FROM IAMARKS
    -> WHERE USN = '1RN13CS091';
Query OK, 0 rows affected (0.130 sec)
```

```
MariaDB [clg]> select * from STU_TEST1_MARKS_VIEW;
+-------+---------+
| TEST1 | SUBCODE |
+-------+---------+
|    15 | 10CS81  |
|    12 | 10CS82  |
|    19 | 10CS83  |
|    20 | 10CS84  |
|    15 | 10CS85  |
+-------+---------+
5 rows in set (0.146 sec)
```

```
MariaDB [clg]> SELECT S.USN,S.SNAME,S.ADDRESS,S.PHONE,S.GENDER,
    -> (CASE
    -> WHEN IA.FINALIA BETWEEN 17 AND 20 THEN 'OUTSTANDING'
    -> WHEN IA.FINALIA BETWEEN 12 AND 16 THEN 'AVERAGE'
    -> ELSE 'WEAK'
    -> END) AS CAT
    -> FROM STUDENT S, SEMSEC SS, IAMARKS IA, SUBJECT SUB
    -> WHERE S.USN = IA.USN AND
    -> SS.SSID = IA.SSID AND
    -> SUB.SUBCODE = IA.SUBCODE AND
    -> SUB.SEM = 8;
+------------+--------+-----------+---------+--------+------+
| USN        | SNAME  | ADDRESS   | PHONE   | GENDER | CAT  |
+------------+--------+-----------+---------+--------+------+
| 1RN13CS091 | TEESHA | BENGALURU | 7712312 | F      | WEAK |
| 1RN13CS091 | TEESHA | BENGALURU | 7712312 | F      | WEAK |
| 1RN13CS091 | TEESHA | BENGALURU | 7712312 | F      | WEAK |
| 1RN13CS091 | TEESHA | BENGALURU | 7712312 | F      | WEAK |
| 1RN13CS091 | TEESHA | BENGALURU | 7712312 | F      | WEAK |
+------------+--------+-----------+---------+--------+------+
5 rows in set (0.164 sec)
```