```
_____
TAB. 1. A:-
1. A) Create the following relation for
 the student:
    Student (regno:string, name:string,
     class:string,
    bdate:date, marks1:int, marks1:int,
    marks2:int,
    marks3:int)
Create the above tables by properly
  specifying the primary keys & foreign keys.
i. Enter at least five tuples of the above
  relation
ii. Demonstrate the usage of following clauses
   for the above relation
    a. Where c. Having
    b. Order By d. GroupBy
iii. Demonstrate the usage of following clauses
    for the above relation
    a. Sum c. Count e. Between
    b. Avg d. Like f. Max & Min
iv. Demonstrate the rollback and commit command
   for the above relation
mysql> create table student(regno varchar(8) primary key,
   name varchar(10).
   class varchar(6),
   bdate date,
   marks1 int,
   marks2 int,
   marks3 int,
   marks4 int)engine =innodb;
mysql> desc student;
+----+
| Field | Type | Null | Key | Default | Extra |
+----+----+----+
| regno | varchar(8) | NO | PRI | NULL
| class | varchar(6) | YES |
                             | NULL |
| bdate | date | YES | | NULL | marks1 | int(11) | YES | | NULL
                                     | YES |
| marks2 | int(11)
                             | NULL
                                     +----+
8 rows in set (0.21 sec)
i. Enter at least five tuples of the above relation
mysql> insert into student values('u01','raju','bca','1997-08-12',45,50,80,60);
Query OK, 1 row affected (0.20 sec)
mysql> insert into student values('u02','ramu','bca','1995-08-12',54,60,80,70);
Query OK, 1 row affected (0.00 sec)
```

mysql> insert into student values('u03','sangeetha','bca','1994-07-21',64,80,70,50);
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values('u04', 'geetha', 'bsc', '1998-04-21', 44, 70, 40, 50);
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values('u05', 'kamala', 'bsc', '1992-04-21', 44, 56, 50, 50); Query OK, 1 row affected (0.00 sec)

## mysql> select \* from student;

+	   name 	+   class   +	bdate	+   marks1 +	+   marks2 +	+   marks3 +	++   marks4   +
u01   u02   u03   u04   u05	raju   ramu   sangeetha   geetha   kamala	bca   bca   bca   bsc   bsc	1997-08-12 1995-08-12 1994-07-21 1998-04-21 1992-04-21	45   54   64   44	50   50   60   80   70	80   80   70   40   50	60     70     50     50

5 rows in set (0.07 sec)1

- ii. Demonstrate the usage of following clauses for the above relation
- a. Where c. Having
- b. Order By d. GroupBy

a. where clause

mysql> select \* from student where class='bca';

+   regno	+   name 	+   class 	bdate	marks1	   marks2	marks3	++   marks4   
u01	raju	bca	1997-08-12	54	50	80	60
u02	ramu	bca	1995-08-12		60	80	70
u03	sangeetha	bca	1994-07-21		80	70	50

3 rows in set (0.07 sec)

b.order by

mysql> select \* from student order by bdate;

4			+			+	L — — — — — — I	+	L
	regno	name	class	bdate	marks1	marks2	marks3	marks4   	L
	u05     u03     u02     u01	kamala sangeetha ramu raju geetha	bsc   bca   bca   bca   bsc	1992-04-21   1994-07-21   1995-08-12   1997-08-12   1998-04-21	44 64 54 45 44	56     80     60     50	50   70   80   80	50     50     70     60	
-			+		+	+	+	++	-

5 rows in set (0.04 sec)

mysql> select \* from student order by bdate desc;

+	regno				   class	bdate			•				+ marks4   	
			geetha		bsc	1998-04-21 1997-08-12	İ	44	İ	70	İ	 İ	50   60	

```
54 |
                                    60 I
                                           80 I
                                                 70 I
| u03 | sangeetha | bca | 1994-07-21 |
                               64 I
                                    80 I
                                           70 I
                                                 50 I
                              44 |
                                    56 |
50 I
                                                 50 I
5 rows in set (0.04 sec)
mysql> insert into student values('u06','heera','bsc','1996-04-21',44,70,40,50);
Query OK, 1 row affected (0.00 sec)
mysql> select class, sum(marks1) as 'total' from student group by class having
total>100;
+----+
| class | total |
+----+
| bca | 163 |
| bsc | 132 |
+----+
2 rows in set (0.00 sec)
GROUP BY
mysql>mysql> SELECT CLASS FROM STUDENT
GROUP BY CLASS;
+----+
| CLASS |
| bca
| bsc
2 rows in set (0.02 sec)
iii. Demonstrate the usage of following clauses for the above relation
a. Sum c. Count e. Between
b. Avg d. Like f. Max & Min
a. sum
mysql> select (marks1+marks2+marks3+marks4) as 'total marks' from student where
regno='u01';
+----+
| total marks |
+----+
      235 I
1 row in set (0.00 sec)
mysql> select sum(marks1), avg(marks1), min(marks1), max(marks1), count(marks1) from
student;
+----+
| sum(marks1) | avg(marks1) | min(marks1) | max(marks1) | count(marks1) |
+----+
      295 | 49.1667 |
                         44 |
                                  64 |
                                              6 I
+----+
1 row in set (0.09 sec)
mysql> select * from student;
+----+
          | class | bdate | marks1 | marks2 | marks3 | marks4 |
| regno | name
+----+
```

0 1000 111 800 (0:00 800)

mysql> select \* from student where name like 'r%';

regno   1	name   class +	bdate	marks1	marks2	marks3	marks4   
	raju   bca ramu   bca 	1997-08-12     1995-08-12	45   54			, , ,

2 rows in set (0.00 sec)

mysql> select \* from student where name like '%ee%';

regno	+   name +	class   					marks4
u03	sangeetha	bca	1994-07-21	64	80	70	50
u04	geetha	bsc	1998-04-21	44	70	40	50
u06	heera	bsc	1996-04-21	44	70	40	50

3 rows in set (0.00 sec)

mysql> select \* from student where name like ' a%';

+	+ regno   +		+   class   +	'	marks1	marks2	marks3	++   marks4   +
	u01   u02	raju ramu sangeetha kamala	bca     bca     bca     bsc	1997-08-12 1995-08-12 1994-07-21 1992-04-21	45 54 64 44	50   60   80   56	80   80   70   50	60     70     50

4 rows in set (0.00 sec)

mysql> select \* from student where bdate between '1995-04-21' and '1997-08-12';

regno	name	class	bdate	marks1	marks2	marks3	marks4
u01     u02     u06	raju ramu heera	bca   bca   bsc	1997-08-12 1995-08-12 1996-04-21	45	50   60		60   70   50

3 rows in set (0.00 sec)

iv. Demonstrate the rollback and commit command for the above relation

```
mysql> set autocommit=off;
Query OK, 0 rows affected (0.00 sec)

mysql> start transaction;
Query OK, 0 rows affected (0.00 sec)

mysql> insert into student values('u06', 'basava', 'bsc', '1992-06-21', 44, 56, 50, 50);
Query OK, 1 row affected (0.00 sec)

mysql> insert into student values('u07', 'pradeep', 'bsc', '1992-06-28', 48, 56, 56, 50);
```

-- we have inserted two records into the table after we set autocommit =off , final values in the table are as below

mysql> select \* from student;

regno	+   name +	+   class   +	bdate	marks1	marks2	+   marks3 +	++   marks4   +
u01   u02   u03   u04   u05   u06   u07	raju   ramu   sangeetha   geetha   kamala   basava   pradeep	bca   bca   bca   bsc   bsc   bsc   bsc	1997-08-12   1995-08-12   1994-07-21   1998-04-21   1992-04-21   1992-06-21   1992-06-28	45   54   64   44   44	50   60   80   70   56   56	80   80   70   40   50   50	60     70     50     50     50     50

<sup>7</sup> rows in set (0.00 sec)

--now if we perform rollback , the two records inserted after the autocommit off are rollbacked(undo insertion).

mysql> rollback;
Query OK, 0 rows affected (0.00 sec)

mysql> select \* from student;

++	class	bdate	+   marks1	marks2	marks3	marks4
++	bca   bca   bca   bsc   bsc	1997-08-12   1995-08-12   1994-07-21   1998-04-21   1992-04-21	45   54   64   44	50   60   80   70	80   80   70   40   50	60   70   50   50

<sup>5</sup> rows in set (0.00 sec)

-- below savpoint demonstration:- for paritial rollback we create a point in the transaction, so that all transaction after the savepoint are rollbacked. And te records before the savepoint are not rollbacked;

```
mysql> savepoint p1;
Query OK, 0 rows affected (0.00 sec)
```

mysql> insert into student values('u09', 'manjula', 'cbz', '1998-06-28', 48, 56, 56, 50);
Query OK, 1 row affected (0.00 sec)

mysql> select \* from student;

regno	+   name 	class	+   bdate 	+   marks1 	+   marks2	+   marks3 	++   marks4   
u01   u02   u03   u04   u05   u08   u09	raju   ramu   sangeetha   geetha   kamala   rajdeep   manjula	bca   bca   bca   bsc   bsc   bsc   bba   cbz	1997-08-12   1995-08-12   1994-07-21   1998-04-21   1992-04-21   1992-06-28   1998-06-28	45   54   64   44   48   48	50   50   80   70   56   56	80   80   70   40   50   56	60     70     50     50     50

<sup>7</sup> rows in set (0.00 sec)

mysql> rollback to p1;
Query OK, 0 rows affected (0.00 sec)

mysql> select \* from student;

regno	name	class	bdate	marks1	marks2	marks3	marks4
u02     u03     u04     u05	raju   ramu   sangeetha   geetha   kamala   rajdeep	bca   bca   bca   bca   bca   bsc   bsc   bba	1997-08-12   1995-08-12   1994-07-21   1998-04-21   1992-04-21	45 54 64 44 44	+	+	++   60     70     50     50

6 rows in set (0.00 sec)

-- in the above table only one record is roll backed(i,e u09) which we have inserted after the creation of savepoint. before savepoint we have inserted(u08) which is not rolled back;

--now below we have inserted another record(u10) after that we have committed the transaction, after that we have rollbacked. Here the record insertion is not roll backed because we have committed after insertion.

mysql> insert into student values('u10','Heera','bsc','1997-06-28',48,56,56,50);
Query OK, 1 row affected (0.00 sec)

mysql> commit;
Query OK, 0 rows affected (0.01 sec)

mysql> select \* from student;

regno	name	class	bdate	marks1	marks2	marks3	marks4
u01	raju ramu sangeetha geetha kamala rajdeep Heera	bca   bca   bca   bsc   bsc   bba   bsc	1997-08-12 1995-08-12 1994-07-21 1998-04-21 1992-04-21 1992-06-28 1997-06-28	45 54 64 44 44 48 48	50   50   80   70   56   56	80   80   70   40   50   56	60   70   50   50   50   50

7 rows in set (0.00 sec)

mysql> rollback;
Query OK, 0 rows affected (0.00 sec)

mysql> select \* from student;

+	+	+	+	<b></b>	+	+	++
regno	name	class	bdate	marks1	marks2	marks3	marks4
u01	   raju	+   bca	1997-08-12	45	50	80	60
u02	ramu	bca	1995-08-12	54	60	80	70
u03	sangeetha	bca	1994-07-21	64	80	70	50
u04	geetha	bsc	1998-04-21	44	70	40	50
u05	kamala	bsc	1992-04-21	44	56	50	50
u08	rajdeep	bba	1992-06-28	48	56	56	50
u10	Heera	bsc	1997-06-28	48	56	56	50
+	+	+	+		+	+	++

7 rows in set (0.00 sec)