1.a)

```
mysql> desc author_
    -> ;
    -> //
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| name         | varchar(20) | YES  |     | NULL    |       |
| publications | varchar(20) | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
2 rows in set (0.02 sec)

mysql> desc book;
    -> //
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| book_isbn   | int         | NO   | PRI | NULL    |       |
| book_name   | varchar(20) | YES  |     | NULL    |       |
| author      | varchar(20) | YES  |     | NULL    |       |
| publisher   | varchar(20) | YES  |     | NULL    |       |
| publication | varchar(20) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)

mysql> desc customer;//
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| name         | varchar(20) | YES  |     | NULL    |       |
| wishlist     | varchar(20) | YES  |     | NULL    |       |
| mobileno     | int         | YES  |     | NULL    |       |
| rented_books | varchar(20) | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql> desc publication_company;//
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| name         | varchar(20)  | NO   | PRI | NULL    |       |
| publications | varchar(20)  | YES  |     | NULL    |       |
| authors      | varchar(20)  | YES  |     | NULL    |       |
| sales        | int          | YES  |     | NULL    |       |
| books        | varchar(200) | YES  |     | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

```
mysql> alter table customer add constraint pk primary key (name);
Query OK, 0 rows affected (0.07 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc customer
    -> ;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| name         | varchar(20) | NO   | PRI | NULL    |       |
| wishlist     | varchar(20) | YES  |     | NULL    |       |
| mobileno     | int         | YES  |     | NULL    |       |
| rented_books | varchar(20) | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

2.a)

```
mysql> select * from student,author_ where student.name = author_.name;//
+--------+--------+------------+------------+--------+
| regno  | name   | percentage | department | name   |
+--------+--------+------------+------------+--------+
|    122 | leela  |      88.00 | cse        | leela  |
|    143 | vamsi  |      87.00 | cse        | vamsi  |
+--------+--------+------------+------------+--------+
2 rows in set (0.00 sec)

mysql> select * from student,author_ where student.department = author_.name;//
Empty set (0.00 sec)
```

2.b)

```
mysql> select * from student inner join author_ on  student.name = author_.name;//
+--------+--------+------------+------------+--------+
| regno  | name   | percentage | department | name   |
+--------+--------+------------+------------+--------+
|    122 | leela  |      88.00 | cse        | leela  |
|    143 | vamsi  |      87.00 | cse        | vamsi  |
+--------+--------+------------+------------+--------+
2 rows in set (0.00 sec)
```

2.c)

```
mysql> select * from student left join author_ on student.name=author_.name;
    -> //
+--------+--------+------------+------------+--------+
| regno  | name   | percentage | department | name   |
+--------+--------+------------+------------+--------+
|    122 | leela  |      88.00 | cse        | leela  |
|    143 | vamsi  |      87.00 | cse        | vamsi  |
|    152 | balaji |      89.00 | cse        | NULL   |
+--------+--------+------------+------------+--------+
3 rows in set (0.00 sec)
```

2.d)

```
mysql> select * from student right join author_ on student.department = author_.name;//
+--------+--------+------------+------------+--------+
| regno  | name   | percentage | department | name   |
+--------+--------+------------+------------+--------+
|   NULL | NULL   |       NULL | NULL       | leela  |
|   NULL | NULL   |       NULL | NULL       | vamsi  |
+--------+--------+------------+------------+--------+
2 rows in set (0.00 sec)
```

2.e)

```
mysql> select * from student left join author_ on student.name = author_.name union select * from student right join author_ on student.name = a
uthor_.name ;
    -> //
+--------+--------+------------+------------+--------+
| regno  | name   | percentage | department | name   |
+--------+--------+------------+------------+--------+
|    122 | leela  |      88.00 | cse        | leela  |
|    143 | vamsi  |      87.00 | cse        | vamsi  |
|    152 | balaji |      89.00 | cse        | NULL   |
+--------+--------+------------+------------+--------+
3 rows in set (0.01 sec)
```

3.a)

```
mysql>    create table book( s_no int, name varchar(20), author varchar(20), price int,publisher varchar(20));
Query OK, 0 rows affected (0.04 sec)

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

mysql>    insert into book(s_no,name,author,price,publisher) values(2,'vamsi','varun',3000,'ultron');
Query OK, 1 row affected (0.00 sec)

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

mysql> insert into book(s_no,name,author,price,publisher) values(2,'vamsi','varun',3000,'ultron');
Query OK, 1 row affected (0.00 sec)

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

mysql> select * from book;
+------+-------+--------+-------+-----------+
| s_no | name  | author | price | publisher |
+------+-------+--------+-------+-----------+
|    2 | vamsi | varun  |  3000 | ultron    |
+------+-------+--------+-------+-----------+
1 row in set (0.00 sec)
```

3.b)

```
mysql> grant select on student to ms;
Query OK, 0 rows affected (0.01 sec)

mysql> show grants for ms;
+---------------------------------------------+
| Grants for ms@%                             |
+---------------------------------------------+
| GRANT USAGE ON *.* TO `ms`@`%`              |
| GRANT SELECT ON `sys`.`student` TO `ms`@`%` |
+---------------------------------------------+
2 rows in set (0.00 sec)

mysql> revoke select on student from ms;
Query OK, 0 rows affected (0.01 sec)

mysql> show grants for ms;
+--------------------------------+
| Grants for ms@%                |
+--------------------------------+
| GRANT USAGE ON *.* TO `ms`@`%` |
+--------------------------------+
1 row in set (0.00 sec)
```

4.a)

```
mysql> insert into student(regno,name,percentage,department)
    -> values(122,'leela',88,'cse'),
    -> (143,'vamsi',87,'cse'),
    -> (152,'balaji',89,'cse');
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> delimiter //
mysql> create procedure stu()
    -> begin
    -> select * from student;
    -> end
    -> //
Query OK, 0 rows affected (0.01 sec)
```

4.b)

```
mysql> call stu();//
+--------+--------+------------+------------+
| regno  | name   | percentage | department |
+--------+--------+------------+------------+
|    122 | leela  |      88.00 | cse        |
|    143 | vamsi  |      87.00 | cse        |
|    152 | balaji |      89.00 | cse        |
+--------+--------+------------+------------+
3 rows in set (0.00 sec)

Query OK, 0 rows affected (0.01 sec)
```

5.a)

```
mysql> create function oh(n int) returns int deterministic begin declare result int default 1; if n=0 or n=1 then return
 1; else while n>1 do set result=result*n; set n=n-1; end while; return result; end if; end //
Query OK, 0 rows affected (0.01 sec)

mysql> select oh(5) as result;
    -> //
+--------+
| result |
+--------+
|    120 |
+--------+
1 row in set (0.00 sec)
```

6.

```
...for the right syntax to use near 'se' at line 1
mysql> select reverse("database");
    -> //
+---------------------+
| reverse("database") |
+---------------------+
| esabatad            |
+---------------------+
1 row in set (0.00 sec)

mysql> select replace ("database management system","management","leela");
    -> //
+------------------------------------------------------------------+
| replace ("database management system","management","leela")      |
+------------------------------------------------------------------+
| database leela system                                            |
+------------------------------------------------------------------+
1 row in set (0.00 sec)

mysql> select repeat("leela",10);
    -> //
+-----------------------------------------------------+
| repeat("leela",10)                                  |
+-----------------------------------------------------+
| leelaleelaleelaleelaleelaleelaleelaleelaleela       |
+-----------------------------------------------------+
1 row in set (0.00 sec)
```