**Section A: Basic Concepts**

1. Create database company\_db

2. create table employees(

employee\_id serial primary key,

first\_name varchar,

last\_name varchar,

salary float,

hire\_date date,

dept\_id int

)

copy employees from 'E:/ARC Institute/SQL/employees.csv' delimiter ',' csv header

create table departments(

dept\_id serial primary key,

dept\_name varchar

)

copy departments from 'E:/ARC Institute/SQL/departments.csv' delimiter ',' csv header

3. DROP: Removes/Delete the entire table and its structure from the database

TRUNCATE: Deletes all rows but keeps the table structure

DELETE: Removes specific rows based on a condition without affecting the table structure

4. Numeric data types : SMALLINT: Range: -32,768 to 32,767

INTEGER or INT: Range: -2,147,483,648 to 2,147,483,647

BIGINT: Range: -9,223,372,036,854,775,808 to 9,223,372,036,854,775,807

SERIAL: Range: Typically, from 1 to 2,147,483,647.

BIGSERIAL: Typically, from 1 to 9,223,372,036,854,775,807.

REAL: Approximately 6-7 decimal digits of precision.

DOUBLE PRECISION: Approximately 15-16 decimal digits of precision.

NUMERIC or DECIMAL: NUMERIC(10, 2)

String : CHAR(n) or CHARACTER(n), VARCHAR(n) or CHARACTER VARYING(n), TEXT

5. CHAR(n) or CHARACTER(n) : A fixed-length character type.

VARCHAR(n) or CHARACTER VARYING(n) : A variable-length character type that can store up to ‘n’ characters.

TEXT : A variable-length character type with no specified length limit.

**Section B: Data Manipulation**

1. create table employees(

employee\_id serial primary key,

first\_name varchar,

last\_name varchar,

salary float,

hire\_date date,

dept\_id int

)

copy employees from 'E:/ARC Institute/SQL/employees.csv' delimiter ',' csv header

2. update employees set salary = salary\*1.10

3. delete from employees where hire\_date<'2022-01-01'

4. select \* from employees where salary between 50000 and 80000

5. select first\_name from employees where first\_name like 'J%'

6.

**Section C: Sorting & Aggregation**

1. select \* from employees order by salary desc

2. select \* from employees order by salary desc limit 3

3.

4.

**Section D: String & Date Functions**

1. select concat(first\_name,' ',last\_name)from employees

2. select extract (year from hire\_date) from employees

3. select upper(first\_name)from employees

4. select age(current\_date, hire\_date) from employees

5. select date\_trunc('month',hire\_date)from employees

**Section E: Advanced Filtering & Conditional Logic**

1. select date\_trunc('month',hire\_date)from employees

2.

**Section F: Joins & Set Operations**

1. select dept\_name, first\_name,salary from employees e join departments d on e.dept\_id =d.dept\_id

2. select first\_name,dept\_name from employees e left join departments d on e.dept\_id =d.dept\_id

4. Union : The UNION removes duplicate rows from the result set, returns only unique records.

select dept\_id from employees

union

select dept\_id from departments

Union\_all : The UNION ALL does not remove the duplicate from result

select dept\_id from employees

union all

select dept\_id from departments