last name;
END loop;
Close empores;
END;

5. **Designing Pipelined Function for sales Data**

```
Create (or) Replace function get sales data(
    P-month number,
    P-year number)
    Return Sales-data type
    Pipelined IS
    Cursor Sales cursor Is
    Select Order ID, Customer ID, order Amount

    FROM ORDERS
    Where extract (month from order Date) = P-month
    AND extract (year from Order Date) = P-year

Sales record

Sales data type % rowtype

Begin
    FOR SALES-record IN Sales cursor loop

pipe row (Sales record);

END loop;
```

(4) Using

```
Declare
    Type emp-caner is RefCursor;
    emp-ref empcursor;
    empid
        Employees.EmployeeID %Type
    firstName
        Employees.firstName %. Type
    last-name
        employees.Lastname %.Type
    salary-threshold Number = 5000;
    sql-stmt varchar(500);

Begin
    Sql-stmt = select employee, Firstname, Lastname
        From employee
        where salary %.salary

    open emp-ref For sql-stmt using salary
    threshold;

    LOOP
        Fetch emp-ref for emp id, FirstName,
        Lastname;
        Exit when emp-ref %. NOTFOUND
        DBMS - output. line (emp-id || "-" ||
                            firstName ||"" ||
```

where
C.parent Category ID is NULL

UNION ALL

Select
  C.category ID,
  C. category Name,
  C. parent Category ID,
  CAST (cp.path || '||' || category Name As VARCHAR(255)
    As path)
FROM
  categories C
  INNER JOIN category path Cp on C.parent Category
    ID = Cp.category ID
)

Select
  Category ID,
  Category Name,
  path
FROM
  category paths;

Select category ID, Category Name and the hierarchal
path, the category paths CTE.
This query effectively traverse the hierarchal
category structure and build fuel for each
category.

---

3) total Distinct Customers by months.

Select
  Date format(Order date i y 2 m) As monthname
  count (Distinct customer ID A)
  Customer Count
From
  Orders
Where
  Order dact ≥ Date - Sub Cur date), Interval
    1 year
Group by
  month Name

4) Finding closest Locations
Select Location ID,
  Location Name,
  longitude,
  latitude,
  (6371 * ACOS (cos (radians (37.774)* cos
    Radians (latitude) * cos (radians(-122 449)
    - Radians (longitude) * sin (radians
    (latitude) As Distance

FROM DEPARTMENT
LEFT JOIN Employees e d department:
e. Departement ID

GROUP BY (
   d.departementID,
   d. department Name.
)

Select
   Department ID
   Department Name:

Select
   Department ID
   Department Name
   Avg salary

FROM
   Avg salaries

ORDER BY
   Avg salary DESC NULLS LAST

LIMIT 3:

3 Question 2: Retreiving Heirachal category path

Setauery

WITH RECURSIVE category path AS (
Select
   C. CategoryID
   c. category Name,
   c. parent CategoryID,
CAST CC. category Name AS VARCHAR (255)) ASP
FROM
   categories C

...gram question : Traffic flow Management System

Scenario :

You are tasked with designing an entity - Relationship (Ek) diagram for a Traffic flow Management system

Task 1 : Entity Identification and Attribute

Roads	Intersections	Traffic signals	Traffic Data
Road ID (PK)	Intersection id (PK)	Signal ID (PK)	Traffic Data ID (PK)
Road Name	Intersection Name	Intersection ID (FK)	Radio (FK)
Length (m)	Lattitude	Signal Status	Timestamp
Speed limit (Km)	longitude	Timer	Speed
			Congestional level

Task 2 : Relational Modelling

Relationships

1 Roads to Intersection

* One Road up can connect to Multiple Intersection
* An Intersection can be Continued by Multiple roads

Intersection to traffic Signals

One Intersection can not Multiple traffic.data Entities

Cardinality and optionality :

1 Roads to Intersection
* One road can connect to zero or more Intersection
* One Intersection can connect to one or more roads

2. Intersection to traffic signals
* One Intersection can have zero or more traffic signals
* One Traffic signal Must be associated with one Intersection

3. Roads to traffic Data
* One road can have zero or more data entities
* One traffic data entry Must be associated with one road

Task 4 :- Satisfication and Normalization

1. scalability
* the design allows for any addition of new Intersection traffic signal and traffic data en modifying the size

2. Real time Data processing
Real time traffic data Integration is facilit
Traffic data

3. Efficient Traffic Management
* the clear seperation of Entities