Customer Behavior Analysis using SQL

Q1. What is the total revenue generated by male vs female customers?

SQL Query

```
SELECT GENDER,
SUM(PURCHASE_AMOUNT) AS TOTAL_REVENUE
FROM CUSTOMER
GROUP BY GENDER;
```

	gender text	total_revenue numeric
1	Female	75191
2	Male	157890

Why this question is important

This helps understand which gender contributes more to revenue, not just customer count.

How a company can leverage this

- ***Focus marketing budget on the higher-revenue segment.***
- ***Design gender-specific promotions or product lines.***
- ***Adjust inventory based on demand patterns.***

Q2. Which customers used a discount but still spent more than the average purchase amount?

SQL Query

```
SELECT CUSTOMER_ID,
    PURCHASE_AMOUNT
FROM CUSTOMER
WHERE DISCOUNT_APPLIED = 'YES'
 AND PURCHASE_AMOUNT > (SELECT AVG(PURCHASE_AMOUNT) FROM CUSTOMER);
```

	customer_id bigint	purchase_amount bigint
1	2	64
2	3	73
3	4	90
4	7	85
5	9	97
6	12	68
7	13	72
8	16	81
9	20	90
10	22	62
11	24	88
12	29	94
13	32	79

Why this question is important

Discounts are usually meant to increase sales, but some customers would spend high even with discounts..

How a company can leverage this

- ***Identify high-value customers***
- ***Reduce unnecessary discounts for these users***
- ***Offer loyalty benefits instead of discounts***

Q3. Which 5 products have the highest average review ratings?

SQL Query

```
SELECT ITEM_PURCHASED,
    ROUND(AVG(REVIEW_RATING::NUMERIC), 2) AS AVG_RATING
FROM CUSTOMER
GROUP BY ITEM_PURCHASED
ORDER BY AVG_RATING DESC
LIMIT 5;
```

	item_purchased text	avg_rating numeric
1	Gloves	3.86
2	Sandals	3.84
3	Boots	3.82
4	Hat	3.80
5	Skirt	3.78

Why this question is important

Highly rated products indicate customer satisfaction and quality.

How a company can leverage this

- ***Promote these products more aggressively***
- ***Use them as flagship or premium products***
- ***Learn what makes these products successful***

Q4. Do subscribed customers spend more than non-subscribed customers?

SQL Query

```
SELECT SUBSCRIPTION_STATUS,
    COUNT(CUSTOMER_ID) AS TOTAL_CUSTOMERS,
    ROUND(AVG(PURCHASE_AMOUNT), 2) AS AVG_SPEND,
    ROUND(SUM(PURCHASE_AMOUNT), 2) AS TOTAL_REVENUE
FROM CUSTOMER
GROUP BY SUBSCRIPTION_STATUS;
```

	subscription_status text	total_customers bigint	avg_spend numeric	total_revenue numeric
1	No	2847	59.87	170436
2	Yes	1053	59.49	62645

Why this question is important

Subscriptions are meant to increase customer lifetime value.

How a company can leverage this

- ***If subscribers spend more → push subscriptions harder***
- ***If not → improve subscription benefits***
- ***Decide pricing and rewards for subscriptions***

Q5. Which products have the highest percentage of discounted purchases?

SQL Query

```
SELECT ITEM_PURCHASED,
  ROUND(
  100.0 * SUM(CASE WHEN DISCOUNT_APPLIED = 'YES' THEN 1 ELSE 0 END) / COUNT(*),  2
    ) AS DISCOUNT_PERCENTAGE
FROM CUSTOMER
GROUP BY ITEM_PURCHASED
ORDER BY DISCOUNT_PERCENTAGE DESC
LIMIT 5;
```

	item_purchased text	discount_percentage numeric
1	Hat	50.00
2	Sneakers	49.66
3	Coat	49.07
4	Sweater	48.17
5	Pants	47.37

Why this question is important

Shows products that rely heavily on discounts to sell.

How a company can leverage this

- ***Re-price products properly***
- ***Improve product value or positioning***
- ***Reduce discount dependency to protect profit margins***

Q6. Segment customers into New, Returning, and Loyal customers.

SQL Query

```
WITH CUSTOMER_SEGMENTS AS (
   SELECT CUSTOMER_ID,
       CASE
          WHEN PREVIOUS_PURCHASES = 1 THEN 'NEW'
          WHEN PREVIOUS_PURCHASES BETWEEN 2 AND 10 THEN 'RETURNING'
          ELSE 'LOYAL'
       END AS CUSTOMER_TYPE
   FROM CUSTOMER
)
SELECT CUSTOMER_TYPE,
     COUNT(*) AS TOTAL_CUSTOMERS
FROM CUSTOMER_SEGMENTS
GROUP BY CUSTOMER_TYPE;
```

	customer_type text	total_customers bigint
1	Loyal	3116
2	New	83
3	Returning	701

Why this question is important

Different customer types need different marketing strategies.

How a company can leverage this

- ***New → onboarding offers***
- ***Returning → personalized recommendations***
- ***Loyal → exclusive rewards and VIP programs***

Q7. What are the top 3 most purchased products in each category?

SQL Query

```
WITH PRODUCT_RANKING AS (
   SELECT CATEGORY,
       ITEM_PURCHASED,
       COUNT(*) AS TOTAL_ORDERS,
       ROW_NUMBER() OVER (
          PARTITION BY CATEGORY
          ORDER BY COUNT(*) DESC
       ) AS RANK
   FROM CUSTOMER
   GROUP BY CATEGORY, ITEM_PURCHASED
)
SELECT CATEGORY,
    ITEM_PURCHASED,
    TOTAL_ORDERS
FROM PRODUCT_RANKING
```

```
WHERE RANK <= 3;
```

	category text	item_purchased text	total_orders bigint
1	Accessori...	Jewelry	171
2	Accessori...	Sunglasses	161
3	Accessori...	Belt	161
4	Clothing	Blouse	171
5	Clothing	Pants	171
6	Clothing	Shirt	169
7	Footwear	Sandals	160
8	Footwear	Shoes	150
9	Footwear	Sneakers	145
10	Outerwear	Jacket	163
11	Outerwear	Coat	161

Why this question is important

Shows best-selling products per category, not overall.

How a company can leverage this

- ***Optimize stock for high-demand products***
- ***Highlight these products on category pages***
- ***Improve supply chain planning***

Q8. Does shipping type affect how much customers spend?

SQL Query

```
SELECT SHIPPING_TYPE,
    ROUND(AVG(PURCHASE_AMOUNT), 2) AS AVG_SPEND
FROM CUSTOMER
GROUP BY SHIPPING_TYPE;
```

	shipping_type text	avg_spend numeric
1	Express	60.48
2	Next Day Air	58.63
3	Store Pickup	59.89
4	2-Day Shipping	60.73
5	Free Shipping	60.41
6	Standard	58.46

Why this question is important

Shipping options can influence purchase size and urgency..

How a company can leverage this

- ***Promote shipping types that increase order value***
- ***Adjust pricing of express shipping***
- ***Improve logistics decisions***

currency used in the document is dollars ($)

END