Learners have to develop a Report to support the answers to the following questions and suggestions.

Objective Questions:

1. What is the total number of attributes in the customer table?
2. How will you get the “Customer’s” ages in the “Order” tables according to customer IDs?
3. In analyzing the dataset with Power BI, ensure data cleaning to address inconsistencies and missing values before further analysis.
4. How can we calculate the total revenue generated by all the sales?
5. What is the total number of unique customers who made purchases each year? Is there any increase in the number over the years?
6. How can we determine the total number of unique products available in the company?
7. What is the average number of days it takes for products to be delivered, get the metric for only the delivered orders.
8. Which products, categories, and subcategories are the most popular?
9. Which products have seen an increase or decrease in sales over the year?
10. While modeling the data relationships, what will be the type of relationship between the customer ID of Orders and customer tables?
11. How have you handled the null values in the data?
12. Were there any data format issues in the data, and if there were/are how you would handle them?
13. When we add a column in Power Query what’s the code that comes in M language in the formula bar? What do you know about M-query?
14. Identify the top 5 most valuable customers using a composite score that combines three key metrics: (SQL)
    a. Total Revenue (50% weight): The total amount of money spent by the customer.
    b. Order Frequency (30% weight): The number of orders placed by the customer, indicating their loyalty and engagement.
    c. Average Order Value (20% weight): The average value of each order placed by the customer, reflecting the typical transaction size.
15. Calculate the month-over-month growth rate in total revenue across the entire

dataset. (SQL)

16. Calculate the rolling 3-month average revenue for each product category. (SQL)
17. Update the orders table to apply a 15% discount on the `Sale Price` for orders placed by customers who have made at least 10 orders. (SQL)
18. Calculate the average number of days between consecutive orders for customers who have placed at least five orders. (SQL)
19. Identify customers who have generated revenue that is more than 30% higher than the average revenue per customer. (SQL)
20. Determine the top 3 product categories that have shown the highest increase in sales over the past year compared to the previous year. (SQL)

Subjective Question:

1. Explain the revenue breakdown by year and by-product. Evaluate how different products contribute to annual revenue and come up with suggestions to increase the sales of the low-selling items.
2. How many products were returned? Use a DAX function to get this metric. Examine the possible reasons for returns and consider how this metric could indicate improvements in product descriptions or quality control.
3. Whenever a customer goes to Amazon, they'll filter the most rated products to buy the better category. Can you verify this using any visualization or table that the ratings of products impact their sales value?
4. Investigate how revenue distribution varies across different locations. Explore which geographical areas contribute most to sales and consider the strategic implications for regional marketing and distribution efforts. How might location-based trends inform the company's market segmentation and resource allocation approach?
5. Determine which month could benefit from enhanced promotional offers to boost sales. Can you suggest some targeted marketing strategies here?
6. Identify which products may require increased marketing efforts. Which items have high prices yet underperform in sales?
7. Assess which products should have discounts. How can targeted incentives drive sales and customer loyalty for specific products?
8. Come up with a loyalty program to benefit the company's customers. From the available lot of customers come up with strategies to bucket them and provide benefits under different loyalty programs.

9. Using the DAX functions Calculate and a row iteration DAX function calculate the total sales for the Product Category “Fashion” and delivery type “Shipped from Abroad”. What are the other types of DAX functions you have used in the project?
10. Wait Times Correlated with Demographics and Care: Explore how average wait times vary across different product categories to optimize scheduling and staffing.
11. Explore if there is any relationship between the Delivery type and waiting time between ordering and receiving an item.
12. Is there any relationship between shipping charges and product type?
13. Come up with strategies to decrease the low rating orders after analyzing different factors like waiting time, shipping type, unit price, etc.
14. Using the time intelligence DAX function, create a table to compare each month’s sales with the previous year’s same month’s total sales. So there will be four columns in the output year, month, total sales, previous_years_sales.
15. What do you understand by PowerBI gateway? What are its use cases?
16. How would you approach this problem, if the objective and subjective questions weren't given?

Report:

The stakeholders have asked for three tabs in the Reporting:

- Main Tab
- Product Tab
- Individual product Tab

- ❖ Using the Main tab in the Report, Stakeholders should be able to look at the total sales, revenue produced till now, and customer satisfaction for all product categories. This tab should have a slicer of product category and date.
- ❖ Using the product Tab, the management at the company should be able to look at the individual product category-wise performance like customer satisfaction, the number of customers purchasing that product, and which product requires improvement. This tab should have a slicer of gender, delivery type, product category, and age group
- ❖ Using the Individual product Tab, the Management and Stakeholder in the company want to look at the best product profile which would involve their total purchase, ID of that product, category/subcategory of that product, average rating, and how much revenue was generated by this product. All the metrics using which they can address the product very carefully in their orders.

Make sure that all the visualizations look decent and are placed in a proper order. Each tab has different POCs (Point Of Contact), so make sure you involve all the metrics that POC may look at in that tab along with those mentioned in the tab description.