Data Analysis Questions by Tool and Difficulty

Excel Questions

Basic:

1. What is the total revenue (unit price × quantity) for each product?
2. How many transactions involved each product category?
3. What is the most sold product (by quantity)?
4. What is the total quantity sold for each product type?
5. What is the average unit price for products sold?

Medium:

1. Create a PivotTable showing revenue per store location and product category.
2. Use VLOOKUP/XLOOKUP to fetch product details for each order.
3. Identify which product types are most popular in each location.
4. Create a chart showing monthly sales trends by category.
5. Highlight products with revenue above a certain threshold using conditional formatting.

Advanced:

1. Build a dynamic dashboard (with slicers) to analyze revenue by store, product category, and time.
2. Use Power Query to merge Orders and Products and create a new calculated column for revenue.
3. Use array formulas to compute the % contribution of each product to total revenue.
4. Create a bubble chart comparing unit price, quantity sold, and revenue.
5. Build a report that auto-updates using Excel Tables and named ranges to analyze product-level performance.

SQL Questions

Basic:

1. What is the total number of transactions for each product?

2. List product names and their total sales quantity.

3. Find the top 5 products by revenue.

4. How many transactions used each payment mode?

5. What is the average transaction quantity per product?

Medium:

1. Which product categories generate the most revenue?

2. Join both tables to find total revenue by store location.

3. List monthly revenue for each product category.

4. Rank products within each category based on total sales.

5. Find the number of distinct products sold at each store.

Advanced:

1. Calculate the contribution of each product to its category's total revenue using window functions.

2. Write a query to identify underperforming products (low sales despite high unit price).

3. Perform cohort analysis of customer (if you extend to include customer data).

4. Use CTEs to find products that had increasing sales over the past 3 months.

5. Identify time slots (based on transaction_time) where specific product types sell best.

Python Questions

Basic:

1. Merge both datasets to create a master sales table.

2. Calculate total revenue for each product.

3. Create a bar plot showing revenue by product category.

4. Find the top 10 most sold products.

5. Count the number of transactions for each payment mode.

Medium:

1. Analyze product-level sales trends over time using a line plot.

2. Identify categories with the highest growth in revenue.

3. Perform a groupby operation to find average revenue per store.

4. Use seaborn to plot heatmaps of store vs product category revenue.

5. Identify best-selling product type per location.

Advanced:

1. Build a predictive model to forecast product demand (time series).

2. Cluster stores based on product sales patterns (using K-means).

3. Perform association rule mining to see which products are sold together (market basket analysis).

4. Detect outliers in product revenue (e.g., very low or very high performers).

5. Use NLP to categorize product_detail and analyze sales by sentiment (if detail has textual pattern).

Power BI Questions

Basic:

1. Create a visual of revenue by product category.

2. Show total transactions by store location on a map.

3. Use a table visual to display product-level sales.

4. Create slicers for product category and store location.

5. Show a bar chart for payment mode distribution.

Medium:

1. Build a matrix to show revenue per product category and store.

2. Create a time-series chart of revenue trends.

3. Use DAX to calculate average revenue per transaction.

4. Build a decomposition tree to explore sales drivers.

5. Create bookmarks to switch between different KPI dashboards.

Advanced:

1. Use DAX to calculate Year-over-Year growth by product category.

2. Build a dashboard that tracks sales vs targets (if targets are added).

3. Add dynamic tooltips showing product performance stats.

4. Create drill-through pages for product and store insights.

5. Use 'What-if Parameters' to simulate price changes and impact on revenue.