**Question 1: Stream Ingestion vs. Stream Analysis**

* **a.** Define stream ingestion and stream analysis. How do they differ in the context of real-time data processing?
* **b.** Provide an example scenario where both stream ingestion and stream analysis would be essential in a data processing pipeline.

**Question 2: Key Concepts of Azure Stream Analytics**

* **a.** What are the core components of an Azure Stream Analytics job? Briefly describe the role of each component.
* **b.** Explain how Azure Stream Analytics integrates with other Azure services like Event Hubs and Power BI. Why is this integration important?

**Question 3: Query Structure in Azure Stream Analytics**

* **a.** Outline the basic structure of a query in Azure Stream Analytics. Include examples of a SELECT clause, a WHERE clause, and a GROUP BY clause.

**Question 4: Implementing Multiple Outputs**

* **a.** Why might a Stream Analytics job need to send data to multiple outputs? Provide an example of a scenario that would benefit from this.

**Question 5: Counting Unique Values**

* **a.** Explain the difference between using COUNT(DISTINCT ...) and ApproxCountDistinct in Stream Analytics queries. When would you use each method?
* **b.** Provide a theoretical example where counting unique values in a stream of data is crucial. Explain how you would implement this in a Stream Analytics query.

**Question 6: Practical Applications of Stream Analytics**

* **a.** Describe a real-world use case for Azure Stream Analytics in an industry of your choice (e.g., finance, healthcare, manufacturing). What value does real-time analytics bring to this industry?
* **b.** Discuss the potential challenges of implementing real-time data processing in a cloud environment. How does Azure Stream Analytics address these challenges?