Bing

Certainly! Here's a brief overview of the solutions to the seven questions from the PDF you're viewing:

- **Question 1**:
  - **a)** Schema Diagram: Use a **star schema** with 'time', 'doctor', and 'patient' as dimensions, and 'count' and 'charge' as measures.
  - **b)** OLAP Operations: Perform a **roll-up** operation on the 'day' dimension to aggregate data by year, specifically for the year 2004, to list total fees collected by each doctor.
  - **c)** SQL Query: Write a **SELECT** statement grouping by 'doctor' and filtering by 'year' to calculate the sum of 'charge'.
- **Question 2**:
  - **a)** Snowflake Schema: Design a schema with 'student', 'course', 'semester', and 'instructor' as dimensions, and 'count' and 'avg_grade' as measures.
  - **b)** OLAP Operations: Execute a **drill-down** operation on the 'course' dimension to filter for CS courses, and a **roll-up** on 'semester' to aggregate grades for each student.
- **Question 3**:
  - **Star Schema**: Create a star schema with 'date', 'spectator', 'location', and 'game' as dimensions, and 'count' and 'charge' as measures.
- **Question 4**:
  - **Weather Bureau Data Warehouse**: Design a warehouse that efficiently stores and processes weather data from probes, considering dimensions like 'date', 'location', and measures like 'air pressure', 'temperature', 'precipitation'.
- **Question 5**:
  - **a)** Vehicle Movement Data Warehouse: Develop a multidimensional space for analyzing vehicle movements with dimensions like 'Auto ID', 'location', 'time', and associated measures.
  - **b)** Noise Reduction: Propose a method to identify and remove erroneous records.
  - **c)** Data Sparsity: Suggest a technique to construct a reliable warehouse despite sparse data[1].
  - **d)** Route Optimization: Discuss how to use the warehouse data to determine the fastest route from A to B.
- **Question 6**:
  - **a)** Maximum Base Cuboid Cells: Calculate as (p^n).
  - **b)** Minimum Base Cuboid Cells: It's (1) if all dimensions have the same single value.
  - **c)** Maximum Data Cube Cells: Compute as ((p+1)^n) including aggregate cells[2].
  - **d)** Minimum Data Cube Cells: It's (n+1) for the base cuboid plus one cell for each dimension's aggregate.
- **Question 7**:
  - **a)** RFID Data Warehouse: Design a warehouse for analyzing RFID-tagged objects with relevant dimensions and measures[3].
  - **b)** Redundancy Reduction: Discuss a method to minimize redundancy in RFID data registration[4].
  - **c)** Noise Cleanup: Propose a technique for cleaning noisy RFID data.
  - **d)** Analytical Processing: Outline steps to analyze the shipping of TV sets by various dimensions.
  - **e)** Spoiled Product Investigation: Explain how to trace the problem of a spoiled product using warehouse data.

This summary provides a high-level view of the tasks and solutions for each question. For detailed answers and diagrams, each question would require a more in-depth analysis and design.