1.
Identify and summarize five issues to be addressed in database administration.   [12]

2.
2.1   Give the definition of a distributed database system.   [03]

2.2   What is the difference between database fragmentation and database replication? Cite a situation that would warrant each.   [04]

2.3   State and clarify four of Christopher Date's twelve rules for distributed databases.   [12]

2.4   Discuss two challenges to distributed databases, and alternate approaches for addressing each challenge.   [08]

3.
3.1   Describe two challenges to OO database management systems.   [06]

3.2   Describe one hybrid approach that facilitates the peaceful coexistence of relational databases and object technology.   [04]

4.
Boch Toyota is a leading automobile distribution company with branches scattered across the US mainland. The company is desirous of keeping track of its sale of multiple product lines and products at various locations on a monthly and yearly basis. Sale is tracked in terms of number of units sold as well as the equivalent sale amount.

4.1   Construct a database conceptual schema that best represents this scenario, and illustrate it in an ERD. Your model may include additional attributes not mentioned in the case providing that you consider them essential. However, no additional entity should be introduced than those implied or mentioned in the case.   [20]

4.2   This database schema appears in multiple operational databases operated by the company. However, it is desirable to preserve this schema for the entire organization over an extended time horizon, where information aggregated from the various operational databases will be stored. Based on what you have learned in this course, propose a relevant solution for this problem.   [02]

4.3   Using an appropriate diagram propose a suitable architecture for your solution. Provide a brief clarification of the diagram.   [12]

Total Possible Points: 83