

Study Questions for the Midterm Exam**Lecture #1**

1. Be prepared to define these terms:
 - a. Data
 - b. database
 - c. database management system
 - d. transaction
 - e. Data independence
 - f. security
 - g. integrity
 - h. views
2. What are the primary objectives of a database management system?
 - a. High Availability
 - b. High Reliability
 - c. High Throughput
 - d. Low Response Time
 - e. Long Lifetime
 - f. Security:
3. What is OLTP (On-line Transaction Processing)?
What is OLAP (On-line Analytic Processing) ?
What is Data Warehouse?
What is Data Mining?

Lecture #2

1. What is a table? What is a relation?
2. What is a row? What is a tuple? What is a query?
3. What are the ACID requirements (Atomicity, Consistency, Isolation, Durability)?

Lecture #3

1. What is a schema?
2. What are the three types of schemas? Define them (physical, conceptual, and external)..
3. What is a Data Definition Language? What is a Data Manipulation Language?
4. What is a View?

Lecture #4

Be prepared to put together a conceptual design of a simple database, on the level of the design in Assignment #4. That necessarily includes recognizing the different classes of entities, their relationships, attributes that belong specifically to a class of entities as well as those that belong to a relationship between entities.

Lecture #5

Be prepared to normalize a database from unnormalized to third normal form. That necessarily includes recognizing candidate keys, functional dependencies, partial dependencies.

Lecture #6

Be prepared to write the necessary SQL to define database tables, including the types of their fields and basic constraints, such as primary and foreign keys, non-null and unique fields.