Midterm Prep

1 Question Types and Points

Question Type	Number	Points	Total
Definitions	10	1	10
Short Answer	2	5.0	10
Write SQL	15	2.0	30
Total			**50**

There will also be extra credit questions worth 1.5 points; the max score is 103%.

2 Terms to Know

Be prepared to define any of these terms. For acronyms, say what each letter means *and* define the overall term as well. For **key concepts***, prepare to discuss the topic in more depth, e.g., describing how they work, why they are important, what their implications are, etc.

2.1 Chapter 1

- Cell
- Column
- **Composite key***
- Data type
- DBMS
- DDL
- DML
- EER
- Foreign key
- Index
- **Many-to-many relationship***
- Null value
- **One-to-many relationship***
- Primary key
- Query
- **Referential integrity***
- Relational database
- Row
- Table

2.2 Chapter 3

- Column alias
- Comparison operator
- Compound (complex) condition
- Concatenate
- Expression
- Function
- Literal value
- Logical operator
- Nested (multi-level) sort
- Null value
- **Order of precedence***
- Parameter
- Wildcard

2.3 Chapter 4

- Cross join
- Explicit syntax
- Implicit syntax
- **Inner join***
- Join
- Join condition
- **Outer join***
- Qualified column name
- Self-join
- Table alias

2.4 Chapter 5

- **MySQL safe update mode***

2.5 Chapter 8

- Character data type
- **Data type***
- Date and time data types
- **Explicit conversion***
- Fixed-length string
- Floating-point number
- **Implicit conversion***
- Integer
- Numeric data types
- Precision
- Real number
- Scale
- String
- Variable-length string
- Year 2038 problem

3 SQL Commands

Given an EER and sample data, be prepared to write SQL commands to accomplish the following tasks.

3.1 Queries

Write SELECT queries with typical clauses including FROM, WHERE, and ORDER BY

3.1.1 SELECT Clause

Gather data from existing columns; create and use column aliases; do simple math

3.1.2 FROM Clause

- Use table aliases
- Write joins using explicit syntax
- Express join conditions with ON or USING
- Write joins that gather related data from two or more related tables

3.1.3 WHERE Clause

- Write simple and complex filtering conditions, using comparison operators and logical operators as necessary
- Use special filtering sub-clauses BETWEEN and IN
- Use IS NULL and IS NOT NULL
- Use wildcards to find substrings at the start, in the middle, or at the end of a string or in a column

3.1.4 ORDER BY Clause

Implement single and multilevel sorts

3.2 Add/Edit/Delete

- Add new data into existing tables, specifying column names or not, as requested. Handle defaults and null values appropriately
- Change existing data in a table
- Remove existing records from a table