Part 1.

1) What is super key, candidate key, primary key?
2) What is a trigger?
3) What is the difference between dynamic SQL and embedded SQL
4) What is a weak entity set?

Given:
items(sku, iname, brand desc)
stores(sid, sname, street_address, city, phone)
sells(sid, sku, price)

Part 2. (Relational Algebra)

1) Find the name, address and city of stores that sells beats brand headphone.
2) Find the name and brand of items that are sold in only one store.
3) Find the name, address and city of the store that sells the cheapest headphone.
4) Find the name and brand of items that are sold by all stores.

Part 3. (SQL Queries)

1) Find the name, address and city of stores that sells beats brand headphone.
2) Find the name and brand of items that are sold in only one store.
3) Find the name, address and city of the store that sells the cheapest headphone.
4) Find the name and brand of items that are sold by all stores.
5) Find the name of the stores and the price of the cheapest headphones of a store has the lowest average price for all items.
6) For the stores who are located in a city which as the lowest average price of all items, list the name, street_address, and city of the store.

Part 4.

Design an ER diagram for

Movies Database

And convert the ER diagram into relations. Indicate primary key and foreign key constants.

Part 5.

Give a relation R(A, B, C, D, E, F, G). Assume the following FD holds.

AB -> C
B -> DEF
C -> B
CD -> E
D -> F

a) Find all the candidate key for this relation. Show step by steps results.
b) Decompose this relation into 3NF. Show step by steps results.
c) Use Chase-Test to verify whether your decomposition is loss-less. Show step by step results.

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L	M	R
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