This is an open text and open notes test.

1. Consider the EMPLOYEES database described by the following Crowsfoot diagram.
Write SQL queries for this schema which

a) For each department, list the department name and the number of employees working for that department that have the title “Barge Scraper”. Those with zero such employees need not be listed.

b) List all employees who work in the department with the most employees.

c) List all employees who are not managers who have a larger salary than some manager (and show the manager’s name).

d) Show all managers who do not work in the department that they manage.

e) (551) List the average salary for the employees of each department. Show the department name and include a 0 for departments with no employees.

2. Draw an ER Diagram for the CAR_INSURANCE problem.
   • There are several insurance companies, with a unique code, they also have a name and an address.
   • There are many customers, with customer id, first and last names, address, phone, and email.
   • Customers can own many several cars, but a car is owned by exactly one customer.
   • Customers purchase policies from the companies for their cars. A policy has a text, a policy number, and a cost. A policy involves one car, one customer, and one company.
   • Two different companies may issue a policy with the same policy number (so policy is weak).
   • Accidents need to be recorded. Accidents have a date (partial key), a description, and are charged to (and owned by) a policy.

Be sure to use the Chen ER notation from the text or the Crowsfoot style as used by MySQLWorkbench.
3. Convert the GRANT ER Diagram to a relational schema. Indicate primary keys and foreign keys.

NOTES
- review is a weak entity, owned by “by” and “of”
- attributes are in the small boxes attached to the entities
- the ovals on the lines next to researcher and grant indicate mandatory membership, as where the text uses curved line arrow tips.
- each advisory board member is a researcher