1. (30 pts) Not in your book...
Consider the following set of requirements for a library database that is used to keep track of books, CD’s, and DVD’s. They are considered collectively as assets, and each asset is assigned a unique asset id.

a. Besides the asset id, the library tracks the title, publisher, and year of publication for each asset. Additional information is also recorded, which includes the authors and number of pages of a book, and the artists of a CD.

b. An asset can have zero or more copies that share the same asset id. A patron can only borrow copies.

c. The library keeps track of each patron’s name, library id, current address and phone, and the copies of assets that they have borrowed.

d. For each transaction, the library records the date on which an asset was borrowed and the date when it becomes overdue. In addition, a patron cannot borrow more than one copy of the same asset. Past transactions are NOT maintained.

e. The library also keeps track of the location for books, CD’s, and DVD’s that are in the library. Each location has a location id.

Design an ER diagram for this application. Specify key attributes of each entity type, and key and participation constraints on each relationship type. Note any unspecified requirements, and make (and note) appropriate assumptions to make the specification complete.

2. (20 pts) Modify the ER diagram in 1 to retain past transactions.
3. (30pts) Describe the meaning of this ER diagram in plain English. Do not describe the attributes. Make sure to talk about the participation constraints and the key constraints and describe what they mean.

4. EX 2.2 from the book (20pts)