Problem 1
The ER model does not specify the following:
• Type of the attribute
• Restriction, if any, on the domains of the attributes
These require separate textual specification.

Problem 2
Cardinality constraint determines the number of instances from each entity class that can participate in a given relationship. The types of cardinality constraints that a relationship can have are:
• One-to-one
• One-to-many
• Many-to-one
• Many-to-many

Problem 3
Weak entity set is one which cannot exist by itself. In other words, for each instance of the weak entity set, there must exist an instance of a strong entity set which is related to it. The attributes of a weak entity set cannot constitute a key.

Problem 4
(a) 
No. There is no requirement in the diagram that a student take a section in order to complete a course.

(b) 
Yes! The relationship is one to many.

(c) 
Yes! It is not a weak entity class
**Problem 5**
Following is the ER diagram for the requirements specification given in the problem statement:

![ER Diagram](image)

**Problem 6**
To capture the One-to-many relationship, we put the key of “one” part (that entity) as an additional attribute in the schema describing the entity of the “many” part (entity). For example:

- Loan (loan_id, amount, branch_id)
- Branch (branch_id, location, assets)