Draw an E-R diagram for the database presented above.

Problem 1

- A General Hospital consists of a number of specialized wards. Each ward is described by ward_id, Name
- The system records the following details about patients: Patient_id, name, Date_Of_Birth
- Each ward may host one or more patients and each patient is hosted by only one ward.
- Each patient is assigned to one leading consultant but may be examined by another consultant, if required.
- Each consultant may be assigned one or more patients and may examine one or more patients.
- Consultants are described by Consultant_id, Name
- The system has to record all required data each time the Nurse gives a patient a certain drug with specified dosage at certain time.
- Each ward is under supervision of one nurse and a nurse may supervise only one ward.
- Each Nurse must serve in one ward
- Data about the nurse is recorded as her name and her number and her address.
- A drug has code number, recommended dosage and more than one brand name

Problem 2

Major airlines companies that provide passenger services keep database with lots of information on all airlines.

(Note that the Identification number is unique)

1. Each airline has an identification number, name and address, name of the contact person and telephone numbers.

2. Each employee works in Airline Company has an employee identification number, name, address, birthday recorded as (day, month, year), gender, position with the company, and qualifications.

3. Each airline owns different aircraft models. For each aircraft an aircraft identification number, capacity, and model is recorded.

4. The aircrafts are assigned to different routes. An aircraft can work on more than one route and a route has many aircrafts going on flights. Some information as number of passengers, price per passenger, departure time, arrival time and the time that aircraft spent in the flight are recorded.

Each route has a route identification number, origin, destination, distance,classification (Into domestic or international route).

5. Each aircraft has its own crew (major pilot, assistant pilot and two hostesses), the aircraft crew not stored as employee. Each crew is assigned to one aircraft.

6. Each airline keeps information about their buy/sell transactions (for example selling an airplane ticket is a sell transaction, paying for maintenance is a buy transaction). Each transaction has a transaction identification number, date, description, and amount of money paid/received.

Problem 3

A database for a banking system is used to control withdrawal, deposit and loan transactions with customers.

- Banks which use this system have many branches; each branch has a unique name, unique address and phone.
- The system stores information about customers as unique customer ID, name, address, and phones.
- Each customer may have only one Account identified by unique Account number, amount and last transaction date (Day, Month and Year).
- A Customer may make any type of transactions (Withdrawal or Deposit).
- The system records Transaction number, Transaction type, Transaction date, Transaction amount and time. The Transaction must occur at only one branch.

Draw an ER diagram. Estimate any missing assumptions

Problem 4

- A General Hospital consists of a number of specialized wards. Each ward may host a number of patients; a patient may be hosted at only one ward.
- On admission, the personal details of every patient are recorded.
- Each patient must be assigned to one leading consultant but may be examined by one or more consultant, if required.
- The system has to record all required data each time the Nurse gives a patient a certain drug with specified dosage at certain time.
- Each ward must be under supervision of one nurse, a nurse must work at one ward.
- Each ward must have one or more nurse who serves on it.
- Data about the nurse is recorded as her name and her number and her address.
- A drug has code number and recommended dosage and more than one brand name