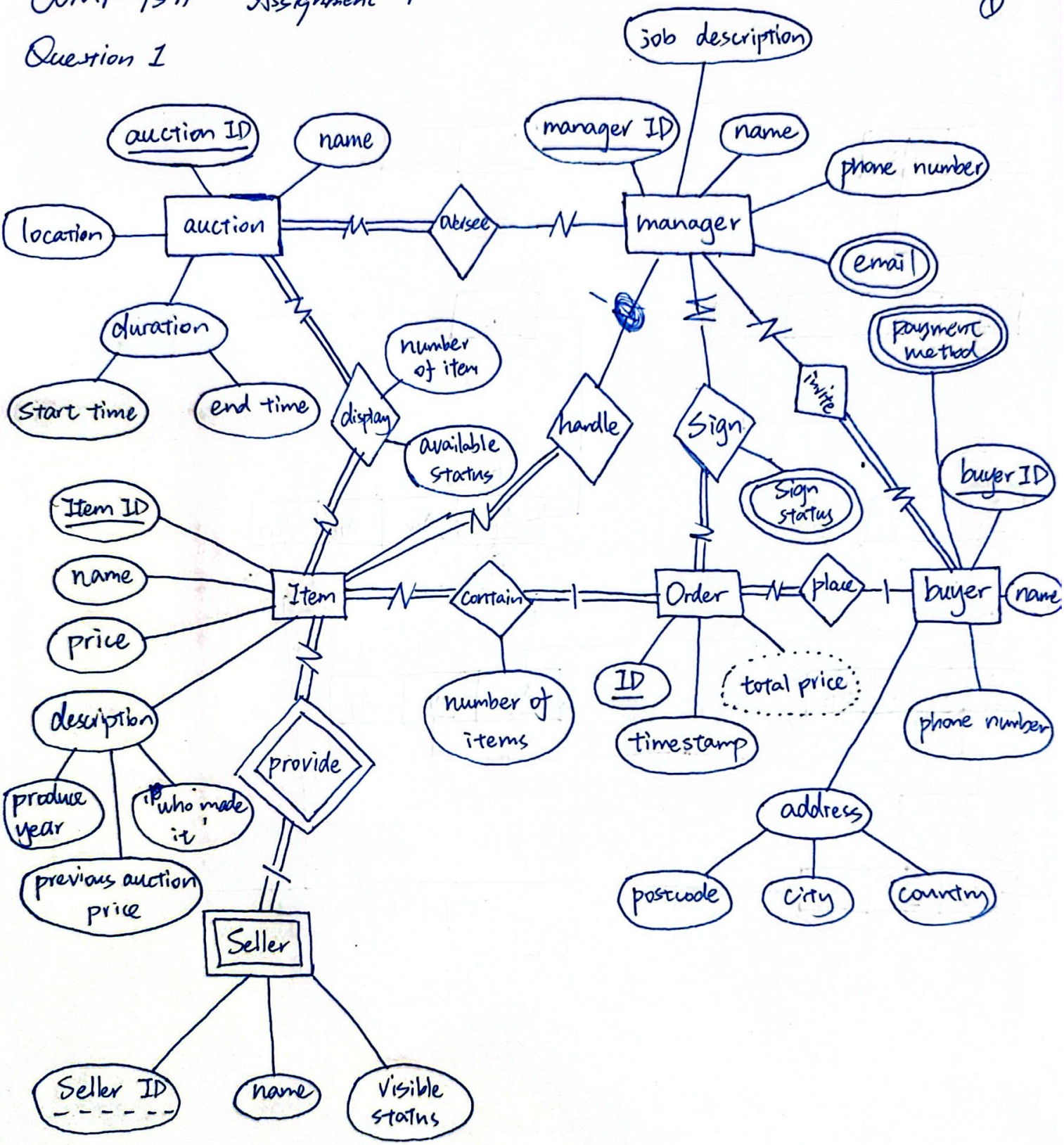
COMP 9311 Assignment 1

Question 1



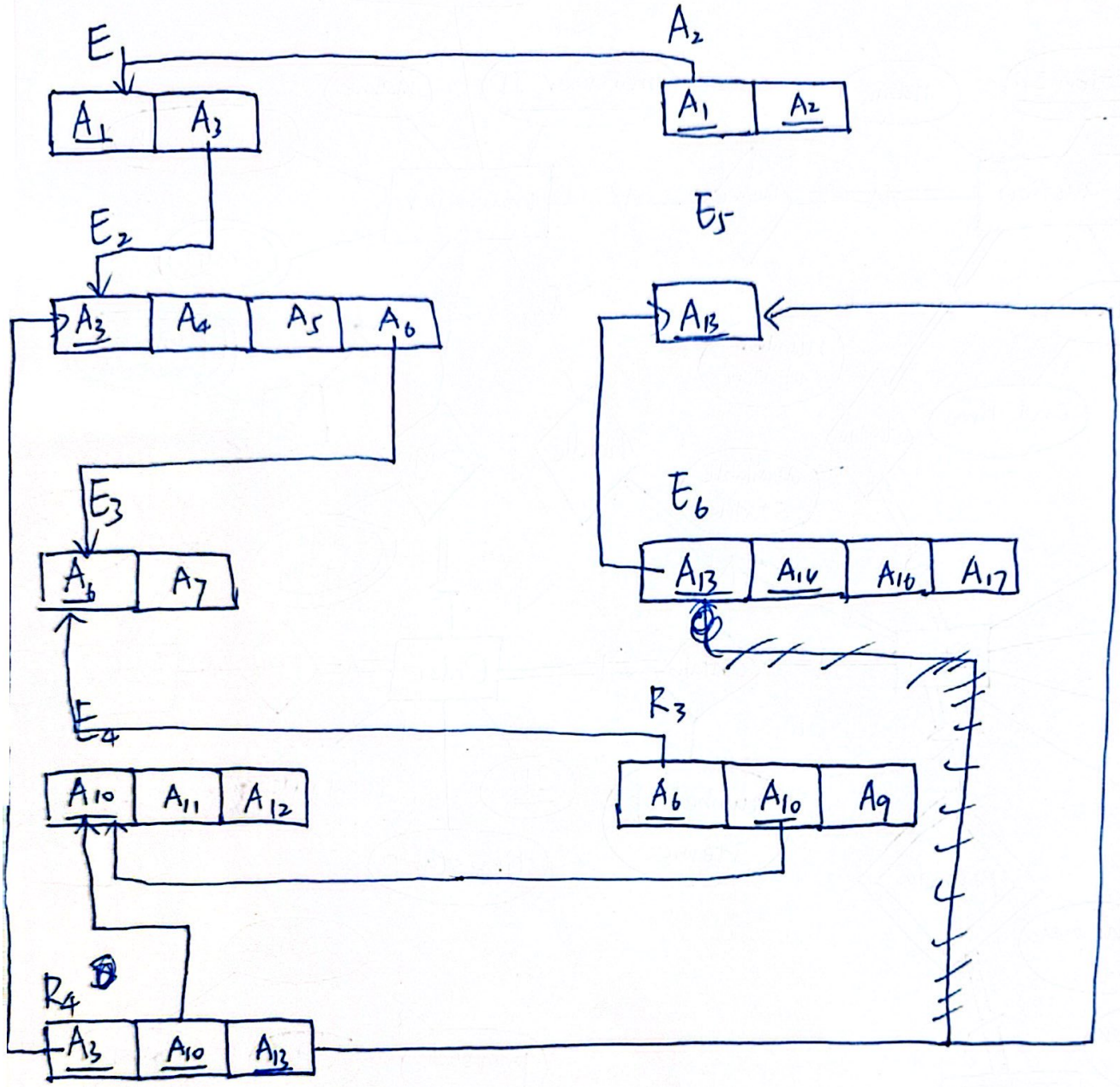
Assumptions: 1. There may be some manager in holiday / out of business

2. Total price is derived by the number × price

3, Not all number of items need to be displayed

4, The relation sign ∞ ∞ record the sign status from each manager required.

Question 2.



Question 3

1) $\pi_{\{model\}}\left(\left(\sigma_{(Year<2000)}(Car)\right) \bowtie \left(\sigma_{(country='Germany')}(Make)\right)\right)$

2)

$R_1 \leftarrow \pi_{\{carID\}}\ (Car \bowtie (\sigma_{(country='Germany')}(Make)))$

$R_2 \leftarrow \gamma_{salpID,\ count(carID)}\left(\sigma_{(saleprice>100000)}\left(\sigma_{(saleYyear=2021}(Sale \bowtie R_1\right)\right)$

$R_3 \leftarrow \pi_{\{salpname\}}\left(\left(\sigma_{crate>4.5)}(Salesperson)\right) \bowtie \left(\sigma_{(count(carID)>15)} R_2\right)\right)$

3)

$R_1 \leftarrow \left(\sigma_{(bodytype='Sedam')}(Car)\right) \bowtie \left(\sigma_{(foundedYyear<1974)}(Make)\right)$

$R_2 \leftarrow \sigma_{(count(serID)>10)}\left(\gamma_{carID,\ count(serID)}\left(\sigma_{(sYear>2021)}(Servie) \bowtie R_1\right)\right)$

$R_3 \leftarrow \pi_{\{cusName\}}\left(\left(\pi_{\{\cancel{carID}\}\ \{cusID\}}(R_2 \bowtie Sale)\right) \bowtie (Customer)\right)$

4) this year only German — sold SUV previously

$R_1 \leftarrow \pi_{\{salpID\}}\left(Salesperson \bowtie \left(\sigma_{(bodytype='SUV')}(Car) \bowtie Sale\right)\right.$

$R_2 \leftarrow \pi_{\{salpID\}}\left(Salesperson \bowtie \left(\sigma_{(country<>'German')}(Make) \bowtie (Car \bowtie \sigma_{(year=2024)}(Sale)\right)\right.$

$R_3 \leftarrow \pi_{\{salpID\}}\left(Salesperson \bowtie (Make \bowtie (Car \bowtie (\sigma_{(year=2024)}(Sale))\right)\right.$

$R_4 \leftarrow \pi_{\{salpName\}}\left(\left((R_3 - R_2) - R_1\right) \bowtie \left(\sigma_{crate>4.8)}(Salesperson)\right)\right)$