Assignment 2 Reference Answer

Question 1

The set of FD are:
1. Customer_name, customer_address → customer_tel
2. artist_name, artist_address→artist_tel
3. price→tax
4. sales_associates→commission_rate
5. title, artist_name, artist_address→price
6. title, category, artist_name, artist_address→cost
7. artist+artistAddr+customer+customerAddr+title+sales -> date

Relational tables:
1. customer (customer_name, customer_address, customer_tel)
2. artist (artist_name, artist_address, artist_tel)
3. sales_associates (sales_name, commission_rate)
4. artwork (title, category, artist_name, artist_address, cost, price)
5. transaction (customer_name, customer_address, date, title, artist_name, artist_address, sales_name, transaction_notes)

Question 2

Relational tables:
1. User (ID, password, city, state/province, country, password_question, password_answer, seller/buyer, e-mail)
2. alert (ID, SeqNo, Alert_search, alert_category)
3. feedback(ID,SeqNo, auctionID, feedback_type, feedback_comment)
4. feedback_rate(ID, feedback_rate)
5. auction (auctioneID, auction_title, sellerID, itemID, highest_bid, start, end)
6. bid (auctioneID, bidder_ID, bid)
7. item(itemID, item_name, description, seller_ID)
Question 3
i)
  a.
  \[ \pi \text{employee-name} \left( \sigma \text{company-name} = \text{"first bank corporation"} \left( \text{Works} \right) \right) \]
  b.
  \[ \pi \text{employee-name, city} \left( \sigma \text{company-name} = \text{"first bank corporation"} \left( \text{Works} \right) \land \text{employee} \right) \]
  c.
  \[ \pi \text{employee-name, street, city} \left( \sigma \text{company-name} = \text{"first bank corporation"} \land \text{salary} > 10000 \left( \text{Works} \right) \land \text{employee} \right) \]

ii)
  a. SELECT employee-name
      FROM works
      WHERE company-name = "first bank corporation"
  
  b. SELECT E.employee-name, E.city
      FROM works W, employee E
      WHERE W.employee-name = E.employee-name
      AND W.company-name = "first bank corporation"
  
  c. SELECT E.employee-name, E.street, E.city
      FROM employee E, works W
      WHERE E.employee-name = W.employee-name
      AND W.salary > 10000
      AND W.company-name = "first bank corporation"