Each problem is worth of 10 points unless stated otherwise. If calculations are required, please include the calculation process then provide the final answer with underline.

1. Use NAND gate to get the following result.
   F=AB+CD+E

2. Find the checksum of the hexadecimal value 7913.

3. Please provide an example of IPv6 address. Describe your example as much as you can.

4. Describe what RFID is.

5. Please use 2's complement arithmetic to solve the following problem.
   a. 3A-A7　b. A4-BB　c. BB+EE

6. Describe public key encryption. How does a computer sign a digital signature on a document?

7. Design a database based on the following user views.
   a. Employee A wants to have an ability to keep track of the orders. He wants to know which customer makes what order(s). He also wants to know the details of the customers about name, age, marital status, birthday, phone number and address. For the order, he wants to know the order number and order date.
   b. Employee B wants to know the relationship between order and part. For the order, he wants to know the order number and order date. For the part he wants to know the part description, unit price, and color. He also wants to know the total number of parts ordered and total price ordered.
   Develop an ER Diagram for all the relationships among all the possible entities. Provide each entity a table which is already in 3rd Normal Form. (20%)

8. 412110 in decimal = (　　　　　　　　　　) in binary? = (　　　　　　) in octal?

9. Explain what information ethics is. What are the subjects entitled in the name of information ethics?