**First Name:\_\_\_\_\_\_\_\_\_\_\_\_ Last Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ID:**

**Final**

**Part I (20%, each question is worth 1 point)**

1.b

2.c

3.b

4.b

5.c

6.d

7.d

8.d

9.b

10.d

11.b

12.b

13.c

14.d

15.e

16.b

17.c

18.d

19.c

20.a

**Part II (80%, each question is worth 20 points)**

**1. Write a SQL command to create the EMPLOYEE table, with following attributes. The primary key is EMP\_NUM, and the table has JOB\_CODE as a foreign key to the JOB table.**

|  |  |
| --- | --- |
| **Attribute (Field) Name** | **Data Declaration** |
| EMP\_NUM | CHAR(3) |
| EMP\_LNAME | VARCHAR(15) |
| EMP\_FNAME | VARCHAR(15) |
| EMP\_INITIAL | CHAR(1) |
| EMP\_HIREDATE | DATE |
| JOB\_CODE | CHAR(3) |

CREATE TABLE EMP\_1 (

EMP\_NUM CHAR(3) NOT NULL,

EMP\_LNAME CHAR(15 NOT NULL,

 EMP\_FNAME CHAR(15) NOT NULL,

 EMP\_INITIAL CHAR(1),

 EMP\_HIREDATE DATE NOT NULL,

 JOB\_CODE CHAR(3),

 PRIMARY KEY (EMP\_NUM),

 FOREIGN KEY (JOB\_CODE) REFERENCES JOB);

**2. Given the following database schema:**

****

Write a SQL command to produce the listing of customer balance for each customer, and his/her total purchases.

****

SELECT CUSTOMER.CUS\_CODE, CUS\_BALANCE, SUM(LINE\_UNITS\*LINE\_PRICE)

FROM CUSTOMER, INVOICE, LINE

WHERE CUSTOMER.CUS\_CODE = INVOICE.CUS\_CODE AND

 INVOICE.INV\_NUMBER = LINE.INV\_NUMBER

 GROUP BY CUSTOMER.CUS\_CODE, CUS\_BALANCE;

**3. Given the same database schema as in question 3., find the listing of customers who did not make purchases during the invoicing period. Your output must match the output shown on Figure 1.**

**FIGURE 1. The Customer Balance Characteristics for Customers Who**

**Did Not Make Purchases During the Invoice Period**

SELECT CUS\_CODE, CUS\_BALANCE

 FROM CUSTOMER

 WHERE CUS\_CODE NOT IN (SELECT UNIQUE CUS\_CODE FROM INVOICE);