THỰC HÀNH 4

Câu 1:

```
1 ●    SELECT
2          c.customerNumber,
3          c.salesRepEmployeeNumber,
4          e.officeCode
5      FROM
6          customers c
7      LEFT JOIN
8          employees e ON c.salesRepEmployeeNumber = e.employeeNumber;
```

customerNumber	salesRepEmployeeNumber	officeCode
125	NULL	NULL
169	NULL	NULL
206	NULL	NULL
223	NULL	NULL
237	NULL	NULL
247	NULL	NULL
273	NULL	NULL
293	NULL	NULL
303	NULL	NULL
307	NULL	NULL
335	NULL	NULL
348	NULL	NULL
356	NULL	NULL

Câu 2:

```sql
1 •   SELECT
2         c.customerNumber,
3         c.creditLimit,
4         p.checkNumber,
5         p.paymentDate,
6         p.amount
7     FROM
8         customers c
9     JOIN
10        payments p ON c.customerNumber = p.customerNumber;
```

customerNumber	creditLimit	checkNumber	paymentDate	amount
103	21000.00	HQ336336	2004-10-19	6066.78
103	21000.00	JM555205	2003-06-05	14571.44
103	21000.00	OM314933	2004-12-18	1676.14
112	71800.00	BO864823	2004-12-17	14191.12
112	71800.00	HQ55022	2003-06-06	32641.98
112	71800.00	ND748579	2004-08-20	33347.88
114	117300.00	GG31455	2003-05-20	45864.03
114	117300.00	MA765515	2004-12-15	82261.22
114	117300.00	NP603840	2003-05-31	7565.08
114	117300.00	NR27552	2004-03-10	44894.74
119	118200.00	DB933704	2004-11-14	19501.82

Câu 3:

```sql
1     -- Lấy các đơn hàng có trạng thái 'In Process'
2 •   SELECT orderNumber
3     FROM orders
4     WHERE status = 'In Process'
5
6     UNION
7
8     -- Lấy các đơn hàng có sản phẩm với số lượng >= 45
9     SELECT orderNumber
10    FROM orderdetails
11    WHERE quantityOrdered >= 45;
```

orderNumber
10420
10421
10422
10423
10424
10425
10100
10101
10103
10104

Câu 4:

```sql
1 •  CREATE VIEW V_OrderDetails AS
2    SELECT
3        od.orderNumber,
4        od.productCode,
5        p.productName,
6        od.quantityOrdered
7    FROM
8        orderdetails od
9    JOIN
10       products p ON od.productCode = p.productCode;
```

Output
Action Output ▾

#	Time	Action	Message
✅ 133	23:31:00	SELECT c.customerNumber, c.creditLimit, p.checkNumber, p.paymentDate, p.amount FROM c...	273 row(s) returned
✅ 134	23:31:41	SELECT orderNumber FROM orders WHERE status = 'In Process' UNION -- Lấy các đơn hàng có sản phẩm ...	262 row(s) returned
✅ 135	23:32:08	CREATE VIEW V_OrderDetails AS SELECT od.orderNumber, od.productCode, p.productName, od....	0 row(s) affected

Câu 5:

```sql
1 •  INSERT INTO offices (officeCode, city, phone, addressLine1, country, postalCode, territory)
2    VALUES ('8', 'Ha Noi', '+84 123 123 123', '19 Le Thanh Nghi', 'Viet Nam', 'VN2022', 'VN');
```

Output
Action Output ▾

#	Time	Action	Message
✅ 128	23:20:44	SELECT c.customerName, c.country AS customerCountry, o.country AS officeCountry FROM custo...	3 row(s) returned
✅ 129	23:21:27	SELECT productName, productCode FROM products WHERE productCode NOT IN (SELECT DISTINCT ...	1 row(s) returned
✅ 130	23:21:51	SELECT productName, productCode FROM products WHERE productCode NOT IN (SELECT DISTINCT ...	1 row(s) returned
✅ 131	23:22:37	SELECT p.productLine, SUM(od.quantityOrdered) AS totalQuantitySold FROM products p JOIN orde...	1 row(s) returned
✅ 132	23:29:13	SELECT c.customerNumber, c.salesRepEmployeeNumber, e.officeCode FROM customers c LEFT J...	122 row(s) returned
✅ 133	23:31:00	SELECT c.customerNumber, c.creditLimit, p.checkNumber, p.paymentDate, p.amount FROM c...	273 row(s) returned
✅ 134	23:31:41	SELECT orderNumber FROM orders WHERE status = 'In Process' UNION -- Lấy các đơn hàng có sản phẩm ...	262 row(s) returned
✅ 135	23:32:08	CREATE VIEW V_OrderDetails AS SELECT od.orderNumber, od.productCode, p.productName, od....	0 row(s) affected
✅ 136	23:33:40	INSERT INTO offices (officeCode, city, phone, addressLine1, country, postalCode, territory) VALUES ('8', 'Ha ...	1 row(s) affected
❌ 137	23:33:52	INSERT INTO offices (officeCode, city, phone, addressLine1, country, postalCode, territory) VALUES ('8', 'Ha ...	Error Code: 1062. Duplicate entry '8' for key 'offices.PRIMARY'

Câu 6:

```sql
1 •  UPDATE offices
2     SET phone = '+84 123 456 456'
3     WHERE officeCode = '8';
```

Output

Action Output

#	Time	Action	Message
✓	129	23:21:27	SELECT productName, productCode FROM products WHERE productCode NOT IN (SELECT DISTINCT ...	1 row(s) returned
✓	130	23:21:51	SELECT productName, productCode FROM products WHERE productCode NOT IN (SELECT DISTINCT ...	1 row(s) returned
✓	131	23:22:37	SELECT p.productLine, SUM(od.quantityOrdered) AS totalQuantitySold FROM products p JOIN orde...	1 row(s) returned
✓	132	23:29:13	SELECT c.customerNumber, c.salesRepEmployeeNumber, e.officeCode FROM customers c LEFT J...	122 row(s) returned
✓	133	23:31:00	SELECT c.customerNumber, c.creditLimit, p.checkNumber, p.paymentDate, p.amount FROM c...	273 row(s) returned
✓	134	23:31:41	SELECT orderNumber FROM orders WHERE status = 'In Process' UNION -- Lấy các đơn hàng có sản phẩm ...	262 row(s) returned
✓	135	23:32:08	CREATE VIEW V_OrderDetails AS SELECT od.orderNumber, od.productCode, p.productName, od...	0 row(s) affected
✓	136	23:33:40	INSERT INTO offices (officeCode, city, phone, addressLine1, country, postalCode, territory) VALUES ('8', 'Ha ...	1 row(s) affected
✗	137	23:33:52	INSERT INTO offices (officeCode, city, phone, addressLine1, country, postalCode, territory) VALUES ('8', 'Ha ...	Error Code: 1062. Duplicate entry '8' for key 'offices.PRIMARY'
✓	138	23:34:12	UPDATE offices SET phone = '+84 123 456 456' WHERE officeCode = '8'	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0

Câu 7:

```sql
1 •  DELETE FROM offices
2     WHERE officeCode = '8';
```

Output

Action Output

#	Time	Action	Message
✓	130	23:21:51	SELECT productName, productCode FROM products WHERE productCode NOT IN (SELECT DISTINCT ...	1 row(s) returned
✓	131	23:22:37	SELECT p.productLine, SUM(od.quantityOrdered) AS totalQuantitySold FROM products p JOIN orde...	1 row(s) returned
✓	132	23:29:13	SELECT c.customerNumber, c.salesRepEmployeeNumber, e.officeCode FROM customers c LEFT J...	122 row(s) returned
✓	133	23:31:00	SELECT c.customerNumber, c.creditLimit, p.checkNumber, p.paymentDate, p.amount FROM c...	273 row(s) returned
✓	134	23:31:41	SELECT orderNumber FROM orders WHERE status = 'In Process' UNION -- Lấy các đơn hàng có sản phẩm ...	262 row(s) returned
✓	135	23:32:08	CREATE VIEW V_OrderDetails AS SELECT od.orderNumber, od.productCode, p.productName, od...	0 row(s) affected
✓	136	23:33:40	INSERT INTO offices (officeCode, city, phone, addressLine1, country, postalCode, territory) VALUES ('8', 'Ha ...	1 row(s) affected
✗	137	23:33:52	INSERT INTO offices (officeCode, city, phone, addressLine1, country, postalCode, territory) VALUES ('8', 'Ha ...	Error Code: 1062. Duplicate entry '8' for key 'offices.PRIMARY'
✓	138	23:34:12	UPDATE offices SET phone = '+84 123 456 456' WHERE officeCode = '8'	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0
✓	139	23:34:40	DELETE FROM offices WHERE officeCode = '8'	1 row(s) affected

Câu 8:

```
1 •  INSERT INTO orderdetails (orderNumber, productCode, quantityOrdered, priceEach, orderLineNumber)
2    VALUES (10425, 'S32_2509', 10, 15.34, 7);
3
4 •  UPDATE orderdetails
5    SET quantityOrdered = 20
6    WHERE orderNumber = 10425 AND productCode = 'S32_2509';
7
8 •  DELETE FROM orderdetails
9    WHERE orderNumber = 10425 AND productCode = 'S32_2509';
```

Câu 9:

Lỗi xảy ra vì quy tắc của toán tử UNION là: **hai câu lệnh SELECT phải có cùng số lượng cột**.

Câu SELECT thứ nhất: `select orderNumber, customerNumber ...` → **có 2 cột**.

Câu SELECT thứ hai: `select orderNumber ...` → **chỉ có 1 cột**. Do số lượng cột không khớp nhau nên CSDL sẽ báo lỗi cú pháp.

Sửa:

```
1 •  SELECT orderNumber FROM orders
2    WHERE status = 'In Process'
3
4    UNION
5
6    SELECT orderNumber FROM orderdetails
7    WHERE quantityOrdered >= 45;
```

Result Grid			Filter Rows:		Export:		Wrap Cell Content:

orderNumber
10420
10421
10422
10423
10424
10425
10100
10101
10103
10104
10105
10106
10108
10109

Câu 10:

Lỗi xảy ra do **sai kiểu dữ liệu**.

Cột `orderNumber` trong bảng `orders` có kiểu dữ liệu là `INT` (số nguyên).

Tuy nhiên, truy vấn lại đang cố gắng chèn giá trị `VN10000`, là một chuỗi ký tự (string), vào cột này. CSDL không thể chuyển đổi một chuỗi có chứa chữ cái thành số nguyên, do đó sẽ báo lỗi.

Sửa:

```
INSERT INTO orders (orderNumber, orderDate, requiredDate, status, customerNumber)
VALUES (50000, '2022-09-12', '2022-09-15', 'In Process', 121);
```

Câu 11:

```
SELECT
    e.officeCode,
    e.employeeNumber,
    e.firstName,
    e.lastName
FROM
    employees e
LEFT JOIN
    customers c ON e.employeeNumber = c.salesRepEmployeeNumber
WHERE
    c.customerNumber IS NULL;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: IA

officeCode	employeeNumber	firstName	lastName
1	1002	Diane	Murphy
1	1056	Mary	Patterson
1	1076	Jeff	Firrelli
6	1088	William	Patterson
4	1102	Gerard	Bondur
1	1143	Anthony	Bow
6	1619	Tom	King
5	1625	Yoshimi	Kato

Câu 12:

```
1   SELECT
2       o.officeCode,
3       SUM(p.amount) AS totalRevenue
4   FROM
5       offices o
6   JOIN
7       employees e ON o.officeCode = e.officeCode
8   JOIN
9       customers c ON e.employeeNumber = c.salesRepEmployeeNumber
10  JOIN
11      payments p ON c.customerNumber = p.customerNumber
12  GROUP BY
13      o.officeCode
14  ORDER BY
15      o.officeCode ASC;
```

officeCode	totalRevenue
1	1337439.58
2	835882.33
3	1072619.47
4	2819168.90
5	457110.07

Câu 13:

```
69  select e.officeCode, e.employeeNumber
70  from employees e
71  left join customers c on e.employeeNumber = c.salesRepEmployeeNumber
72  where c.customerNumber is null;
73
```

officeCode	employeeNumber
1	1002
1	1056
1	1076
1	1143
4	1102
5	1625
6	1088
6	1619

Câu 14:

```
75 •   select e.officeCode, sum(p.amount) as totalRevenue
76     from employees e
77     join customers c on e.employeeNumber = c.salesRepEmployeeNumber
78     join payments p on c.customerNumber = p.customerNumber
79     group by e.officeCode
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

officeCode	totalRevenue
1	1337439.58
2	835882.33
3	1072619.47
4	2819168.90
7	1324325.90
6	1007292.98
5	457110.07

```
1 •   SELECT productName, productCode
2     FROM products
3   ⊖ WHERE productCode NOT IN (
4         SELECT DISTINCT od.productCode
5         FROM orderdetails od
6         JOIN orders o ON od.orderNumber = o.orderNumber
7         JOIN customers c ON o.customerNumber = c.customerNumber
8         WHERE c.country = 'France'
9     );
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

productName	productCode
1985 Toyota Supra	S18_3233
1970 Triumph Spitfire	S18_4027
NULL	NULL

Câu 15:

```sql
1   CREATE TABLE offices_usa (
2       officeCode TINYINT PRIMARY KEY,
3       city VARCHAR(50),
4       phone VARCHAR(50)
5   );
6
7   INSERT INTO offices_usa (officeCode, city, phone)
8   SELECT
9       officeCode,
10      city,
11      phone
12  FROM
13      offices
14  WHERE
15      country = 'USA';
```

Output

Action Output

#	Time	Action	Message
✓	147	23:42:25	CREATE TABLE offices_usa (officeCode TINYINT PRIMARY KEY, city VARCHAR(50), phone VARC...	0 row(s) affected
✓	148	23:42:25	INSERT INTO offices_usa (officeCode, city, phone) SELECT officeCode, city, phone FROM offices ...	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0