Practical Exam
S1

I Let VideoGames be a table in a SQL Server database with schema VideoGames [FK1, FK2, C1, C2, C3, C4, C5]. The primary key is (FK1, FK2). Answer questions 1-3 using the legal instance below (each question has at least one correct answer).

FK1	FK2	C1	C2	C3	C4	C5
3	5	God of War	Sony	11	10	KJ
6	8	Minecraft	Microsoft	13	0	HJ
8	9	PUGB	Tencent	30	110	GH
4	1	Pokemon	Nintendo	250	55	DF
4	3	Call of duty	Blizzard	30	10	GT
2	7	Fifa 2023	Electronic Arts	150	310	LK
3	7	Fortnite	Epic Games	45	150	KJ
5	4	Elden Ring	Bandai	78	89	IU
5	5	NBA	Interactive Software	21	81	OI

1. Consider query Q below:

```
SELECT C2, SUM(C3) TotalC3, AVG(C4) AvgC4
FROM VideoGames
WHERE C3<=30  AND C4 > 20
GROUP BY C2
HAVING AvgC4 > 80 AND SUM(C3) <20
```

a. Q returns 3 records and value Nintendo is in its result set.
b. Q returns 3 records and value Blizzard is not in its result set.
c. Q returns 2 records and value Bandai is not in its result set.
d. Q returns 4 records and value Sony is in its result set.
e. None of the above answers is correct.

2. How many records does the following query return?

```
SELECT
    A.C2
FROM
    VideoGames A
INNER JOIN
    VideoGames B
ON
    A.FK1 = B.FK1 AND A.FK2 = B.FK2
WHERE A.C3 > 100 OR B.C4 > 100 and A.C2 LIKE '%E%'
```

a. 4
b. 1
c. 2
d. 5
e. None of the above answers is correct.

3. Table VideoGames has a single trigger defined on it:

```
CREATE OR ALTER TRIGGER TrOnUpdateVideoGames
  ON VideoGames
  FOR UPDATE
AS
  DECLARE @total INT = 0
  SELECT @total = SUM(i.C3 + d.C3)
  FROM deleted d INNER JOIN inserted i ON d.FK1 = i.FK1 AND d.FK2 = i.FK2
  WHERE d.C3 < i.C3
  PRINT @total
```

What's the value returned by the PRINT statement in the trigger when the UPDATE below is executed?

```
UPDATE VideoGames
SET C3 = 30
WHERE FK1 >= FK2
```

a. 51
b. 21
c. 159
d. 108
e. None of the above answers is correct.

II.

Create a database to manage services offered by a crypto exchange. The database will store data about all the intermediaries involved in trading. The entities of interest to the problem domain are : Clients, Accounts, Cryptos, Transactions and Statistics. A client has a name and unique identification number called ClientID, also each client can only one account. An account has a client identification number (ClientID) and another field call investing money(the amount of money added by the client to the account, waiting to be invested). An account can have multiple types of cryptos bought(Bitcoin, Ethereum and Dodgecoin) and a price to each one of the cryptos mentioned. An account can have multiple transactions, 3 rows(fields) registered(on Bitcoin, Ethereum or Dodgecoin), also there are two different transaction types (BUY or SELL, two other rows(fields)).An account can have as well multiple statistics related(number of buy orders, number of sell orders, total number of operations buy + sell and the amount of money left for investing(initial amount - spent amount(invested money))) .

1. Write a SQL script that creates the corresponding relational data model.

2. Implement a stored procedure that receives a Client and returns all the crypto's names bought by the client and the investing amount left in his account(initial amount – invested money).

3. Create a view that shows all the Clients with their identification number and the amount of SELL and BUY transactions performed.

4. Implement a function that lists the identification numbers of the clients which are investing only in Bitcoin and the number of transactions made.

I. 1   1p
 2   1p
 3   1p
II. 1   2p
 2   1p
 3   2p
 4   1p
    1p of