Databases
Practical Exam

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S II

I Let Songs be a table in a SQL Server database with schema Songs [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
7	8	With or Without You	U2	38	32	GH
6	9	Bennie and the Jets	Elton John	28	25	FD
7	1	Paint It, Black	The Rolling Stones	11	21	TY
3	4	Stairway to Heaven	Led Zeppelin	45	98	HJ
1	2	Money	Pink Floyd	98	87	IK
2	2	Bohemian Rhapsody	Queen	62	54	OL
7	2	A Day In The Life	The Beatles	21	84	ER
5	5	Billie Jean	Michael Jackson	35	65	WE
3	7	A place for my head	Linkin Park	17	45	WS

1. Consider query Q below:

```
SELECT C2, SUM(C3)
FROM Songs
WHERE C3>28 OR C4 < 25
GROUP BY C2
HAVING C2 LIKE 'P%'
```

a. Q returns 1 record and value The Beatles is in its result set.
b. Q returns 1 record and the value Pink Floyd is not in its result set.
c. Q returns 2 records and value Pink Floyd is not in its result set.
d. Q returns 2 records and value The Beatles is in its result set.
e. None of the above answers is correct.

2. How many records does the following query return?

```
SELECT C1, C5 FROM Songs
WHERE C2 IN(
SELECT
   A.C2
FROM
    Songs A
LEFT JOIN
   Songs B
```

```
  ON
    A.FK1 = B.FK1 AND A.FK2 = B.FK2
  WHERE A.C3 > 21 AND B.C5 LIKE '%W%')
```

a. 0
b. 1
c. 2
d. 3
e. None of the above answers is correct.

3. Table Game Developers has a single trigger defined on it:

```
CREATE OR ALTER TRIGGER TrOnUpdateSongs
 ON Songs
 FOR UPDATE
AS
 DECLARE @total INT = 0
 SELECT @total = SUM(i.C4 - d.C4)
 FROM deleted d INNER JOIN inserted i ON d.FK1 = i.FK1 AND d.FK2 = i.FK2
 WHERE d.C4 <= i.C4
 PRINT @total
```

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

```
UPDATE Songs
SET C4 = 21
WHERE FK1 >= FK2
```

a. 30
b. 50
c. 20
d. 0
e. None of the above answers is correct.

II.

Create a database to manage services offered by a Tax management company. The database will store data about all the intermediaries involved. The entities of interest to the problem domain are: TaxCompany, Clients, Assets and SRLs(companies opened by the Tax company for their clients).A tax company has a name, number of clients and number of opened SRLs(each client has a number of companies(SRLs) opened in his name).A tax company can have multiple clients, a client can work only with one tax company. A client has an ID, identification number and the amount of money sent to the tax company(money at his disposal). Furthermore, a client can have multiple assets and multiple SRLs opened. Assets have a name, number of assets for each client

and a location (the location of the SRL to which the assets were added). SRLs have a name, an activity and a location (place where the company is established).

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

2. Implement a stored procedure that receives a client and returns the number of assets owned and the number of SRLs opened in his name.

3. Create a view that shows client's identification number and amount of money owned, also the name and activity of all the SRLs opened in his name.

4. Implement a function that lists the identification numbers of the clients and the location of all the SRLs opened in his name and in addition the number of assets for each SRL.

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