Name: Ahmed Khaled El-Sayed

Department: IS

Section: 1

1. XML in Databases

Definition:

XML (Extensible Markup Language) is a format used to store and exchange data in a structured way.

Example:

```
<Library>
 <Book>
  <Title>Clean Code</Title>
  <Author>Robert Martin</Author>
  <Year>2008</Year>
 </Book>
 <Book>
  <Title>Design Patterns</Title>
  <Author>GoF</Author>
  <Year>1994</Year>
 </Book>
</Library>
```

Explanation:

- XML allows storing hierarchical data.
- In SQL Server, you can also create a column of type XML to store this data.

2. Deferred Constraint in Databases

Definition:

A deferred constraint is a database rule that delays checking until the end of a transaction, instead of checking immediately after each operation.

Example:

```
SET CONSTRAINTS ALL DEFERRED;
BEGIN TRANSACTION;

UPDATE Accounts SET balance = balance - 100 WHERE id = 1;
UPDATE Accounts SET balance = balance + 100 WHERE id = 2;
```

COMMIT;

Explanation:

- The database temporarily allows operations that might violate constraints.
- It checks all constraints only at the end of the transaction to ensure data integrity.