Databases CS 340
Quiz 2 - V1

Name:
ID:

- Do not copy from others or share answers.
- Mobile phones and electronic devices are strictly prohibited.
- Any unfair means will result in cancellation of your paper.
- Attempt all questions and write answers in the space provided.

Section A: MCQS (5 x 2 = 10 marks)

Q1. In SQL Server, what is a limitation of using TOP (n) WITH TIES?

a. It may return more than n rows, so the exact number of rows cannot always be predicted.
b. It cannot be combined with the ORDER BY clause.
c. It removes duplicate values automatically, even without DISTINCT.
d. It always guarantees exactly n rows, regardless of ties.

Q2. You want to filter only customers who have not placed any orders.
Tables: SalesLT.Customer, SalesLT.SalesOrderHeader

a. LEFT JOIN + WHERE PurchaseOrderNumber IS NULL
b. INNER JOIN + WHERE PurchaseOrderNumber IS NULL
c. RIGHT JOIN
d. CROSS JOIN

Q3. What is the result of this SQL snippet?

```
SELECT Name
FROM Product
WHERE ListPrice >
  (SELECT MAX(UnitPrice) FROM SalesOrderDetail);
```

a. Names of products whose list price is greater than every unit price sold
b. Names of products whose list price is equal to the maximum unit price sold
c. Names of products sold at the maximum unit price
d. Names of products not sold at all

Q4. You run the following query:

```
SELECT Salesperson, COUNT(CustomerID) AS Customers
FROM SalesLT.Customer
WHERE COUNT(CustomerID) > 100
GROUP BY Salesperson
ORDER BY Salesperson;
```

a. A list of salespeople with more than 100 customers
b. A syntax error, because COUNT is not a valid function in SQL
c. An error, because aggregate functions cannot be used in the WHERE clause
d. All salespeople with their customer counts, without filtering

Q5. When a derived class overrides a base class method using override, which principle is shown?

a. Polymorphism
b. Abstraction
c. Encapsulation
d. Aggregation

Section B: Theory (2 x 8 = 16 marks)

Q1. Explain the difference between an inner join and an outer join.

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Q2. How does the HAVING clause differ from the WHERE clause?

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Q3. What is the clause required to return product categories with an average price greater than 10?

Q4. How does the IIF() function work?

Q5. What is a Cartesian product, and how can it occur accidentally in SQL?

Q6. What is a subquery, and what is its relationship to the main query?

Q7. How can the EXISTS predicate be used with subqueries?

Q8. Write a clause required for a query to return rows 11 to 20 from a sorted product list.