

University Computer Science

Name: _____ Score: _____

1. A many-to-many relationship becomes –
 - ☐ a foreign key column
 - ☐ a view
 - ☐ nothing
 - ☐ its own junction table
2. The operator that keeps columns is –
 - ☐ selection
 - ☐ union
 - ☐ join
 - ☐ projection
3. Changing a course title in 14 enrollment rows is –
 - ☐ an update anomaly
 - ☐ correct behaviour
 - ☐ an insert anomaly
 - ☐ a delete anomaly
4. A fan-out-100 B-tree of height 3 covers – keys
 - ☐ 10 000
 - ☐ 100 million
 - ☐ 300
 - ☐ 1 000 000
5. The A in ACID stands for –
 - ☐ availability
 - ☐ audit
 - ☐ atomicity
 - ☐ async
6. Authorisation decides –
 - ☐ what you may do
 - ☐ who you are

- ☐ where data lives
 - ☐ how fast queries run
7. PRIMARY KEY (student, course, term) enforces –
- ☐ one enrollment per student-course-term
 - ☐ nothing without triggers
 - ☐ one enrollment per course
 - ☐ one enrollment per student
8. Filtering on COUNT(*) happens in –
- ☐ ON
 - ☐ HAVING
 - ☐ WHERE
 - ☐ GROUP BY
9. A part-key dependency breaks –
- ☐ 3NF
 - ☐ BCNF only
 - ☐ 1NF
 - ☐ 2NF
10. EXPLAIN QUERY PLAN without an index prints –
- ☐ LOCK
 - ☐ SCAN
 - ☐ nothing
 - ☐ SEARCH USING INDEX

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1. **its own junction table**

The junction table holds the foreign-key pairs; neither end can hold the other.

2. **projection**

Projection π keeps the chosen columns; selection σ keeps rows.

3. **an update anomaly**

One fact stored many times: the update anomaly.

4. **1 000 000**

m to the h: 100 cubed is a million - 3 reads per lookup.

5. **atomicity**

All or nothing: the transaction commits completely or not at all.

6. **what you may do**

Authentication proves identity; authorisation bounds the rights.

7. **one enrollment per student-course-term**

The composite key rejects duplicate triples at the engine level.

8. **HAVING**

WHERE filters rows before grouping; HAVING filters the groups.

9. **2NF**

2NF removes dependencies on part of the key; 3NF the transitive ones.

10. **SCAN**

The engine says what it will do: SCAN is the full-table read.