

3.4 SQL queries and joins

Name: _____ Class: _____ Date: _____ **Total: 12 marks**

KEY WORDS SQL 结构化查询语言 • SELECT 查询 • WHERE 条件 • JOIN 连接

Objective

Use SQL to retrieve related data safely and accurately.

You must be able to:

- write a basic SELECT query with WHERE
- explain a JOIN condition
- identify the effect of a missing JOIN condition

1 Worked examples

■ Ask for exactly the rows needed

SELECT name FROM courses WHERE level = 'beginner'; asks for names of beginner courses. SQL is **declarative**: it states what is wanted.

A **JOIN 连接** combines related tables through matching keys: **enrolments e JOIN courses c ON c.id = e.course_id**. The ON condition prevents unrelated rows being paired.

2 Practice

2.1 State which SQL word selects columns from a table. [1]

2.2 State the purpose of a WHERE condition. [1]

2.3 Explain why a JOIN needs an ON condition. [2]

3 Exam-style questions

3.1 Write a query to return title from books where available is true. [4]

3.2 Explain what can happen when two tables are joined without a condition linking their keys. [4]

Solutions

2.1

- `SELECT`.

2.2

- It filters rows to those matching a condition.

2.3

- It states which matching keys connect the two tables.
- It prevents unrelated rows being combined.

3.1

- `SELECT title FROM books WHERE available = true;`

3.2

- Every row may be paired with every row in the other table.
- The query returns many meaningless combinations.
- This can give the wrong result and use unnecessary resources.
- An `ON` condition matching the foreign and primary keys is required.