MODULE N DATABASES AND SQL · N5

SQL: ORDER BY, SUM, COUNT, AND and OR: mark scheme

21 marks · Cambridge 0478 syllabus 9.4 (read, understand and complete SQL scripts to query a single table: SELECT, FROM, WHERE, ORDER BY ascending/descending, SUM, COUNT, AND, OR; identify the output of an SQL statement)

How to use. One mark per creditworthy point up to the maximum shown. **/** separates alternative words; **//** separates alternative answers. Words in (brackets) are not needed for the mark. Ignore the case of SQL keywords, a missing final semicolon and extra spaces between keywords. Field and table names must be spelt as in the table (`RepairJob`, `Category`, `Minutes`, `PartsCost`, `JobID`). Accept single or double quotation marks around text values; text values in a condition must be in quotation marks. For outputs, ignore column headings and extra spacing; do not accept quotation marks or commas added to the values. Credit any other valid answer that shows the same understanding.

QUESTION	ANSWER	MARKS	GUIDANCE
1(a) 0478 9.4	One mark for each correct row: • adds together the values: `SUM` • number of records that match: `COUNT` • largest value first: `ORDER BY` … `DESC` // `ORDER BY` … `DESCENDING` • at least one of two conditions: `OR`	**4**	Row 3 needs both `ORDER BY` and `DESC`/`DESCENDING`; `DESC` alone or `ORDER BY` alone = 0; `ASC` = 0. Accept a field name written between the keywords (e.g. `ORDER BY Minutes DESC`). Accept `SUM()` / `COUNT()` with brackets. Row 4: `AND` = 0.
2(a) 0478 9.4	One mark per bullet point: • the three items Radio, Kettle and Desk lamp only (in any order) • the correct Minutes value beside each item (60, 30, 25), and no other fields output • in the order Radio, Kettle, Desk lamp Correct output: Radio 60 Kettle 30 Desk lamp 25	**3**	Including Toaster (not fixed) or any non-Electrical job loses the first mark; the order mark can still be given if the three correct items are in the correct order relative to each other. Ascending order (Desk lamp, Kettle, Radio) loses the third mark only. Extra fields (e.g. `JobID`, `Category`) lose the second mark. Item and minutes may be on the same line or in two columns.

QUESTION	ANSWER	MARKS	GUIDANCE
2(b) 0478 9.4	Any **two** from: • the `WHERE` clause / condition decides which records are output // `ORDER BY` does not filter / select records • the condition is not changed, so the same (three) repair jobs are output // Radio, Kettle and Desk lamp are still output • `ASC` only changes the order // the jobs are sorted in ascending order of Minutes instead • the shortest job / Desk lamp (25) would now be first and the longest / Radio (60) last // the order is reversed	**2**	"It only changes the order" alone = 1. Do not credit "ASC means all records are output" or answers saying a different number of records is output.
3(a) 0478 9.4	4	**1**	Correct answer only. Records R03, R05, R07, R08 (R05 meets both conditions but is counted once). 5 (Winter coat, 40, is not > 40; or R05 counted twice) = 0. 1 (AND used) = 0.
3(b) 0478 9.4	3.50 // 3.5	**1**	2.00 + 1.00 + 0.50. Ignore a currency symbol. 3 (the count of Textiles jobs) = 0.

4(a)
0478 9.4
	One mark for each correct gap:
	• `FROM RepairJob`
	• `AND`
	• `<`
	• `ORDER BY PartsCost` // `ORDER BY PartsCost ASC` // `ORDER BY PartsCost ASCENDING`
	Completed statement:
	`SELECT Item, PartsCost`
	`FROM RepairJob`
	`WHERE Category = 'Textiles' AND`
	`Minutes < 30`
	`ORDER BY PartsCost ASC;`
	Output (for checking): Curtains 0.50, then Jeans 1.00.
		4	Gap 3: `<=` = 0 (the job must take less than 30 minutes). Gap 4: `ASC` may be left out because ascending is the default. `DESC` = 0. `ORDER BY Minutes` = 0 (wrong field). `OR` in gap 2 = 0.

QUESTION	ANSWER	MARKS	GUIDANCE

5(a)
0478 9.4
	One mark for each correct line:
	• `SELECT SUM(Minutes)`
	• `FROM RepairJob`
	• `WHERE Category = 'Bicycle'`
	Example:
	`SELECT SUM(Minutes)`
	`FROM RepairJob`
	`WHERE Category = 'Bicycle';`
	Output (for checking): 65
		3	`COUNT(Minutes)` or `SELECT Minutes = 0` for the first mark. Accept `SUM (Minutes)` with a space. `Bicycle` written without quotation marks loses the third mark. Extra correct conditions that do not change the result (e.g. `AND Minutes > 0`) are not penalised; `AND Fixed = TRUE` loses the third mark (it leaves out Folding bike). An `ORDER BY` line is ignored.

6(a) 0478 9.4	One mark for each error identified **and** corrected: • Line 01: `SELECT COUNT(JobID)` // `SUM` should be `COUNT` • Line 03: `WHERE Category = 'Electrical'` // quotation marks needed round `Electrical` • Line 04: `AND Fixed = TRUE;` // `OR` should be `AND` Output of the corrected statement (for checking): 3	**3**	Line number and correction are both needed for each mark. Line 01: accept `COUNT(*)` or `COUNT` of any field. Line 04: accept `AND Fixed` // `AND Fixed = Yes`. Line 02 has no error.

Total: 21 marks