Querying and SQL Functions

Standard difficulty · 20 questions · 40 marks · Time: 39 minutes

Name: _____ Date: _____ Score: ____ / 40

Show your working for Sections B and C. Answers are on the last page — try every question first!

Section A — Choose the correct answer — 8 × 1 = 8 marks

1. A single row function in SQL:

(a) works only on numbers

(b) can be used only after GROUP BY

(c) gives one result for the whole table

(d) gives one result for each row it is applied to

2. What does this query return?
SELECT ROUND(926.716, 2);

(a) 926.73 **(b)** 927 **(c)** 926.72 **(d)** 926.716

3. What does this query return?
SELECT MID('Spreadsheet', 2, 3);

(a) pre **(b)** rea **(c)** Spr **(d)** pr

4. What does this query return?
SELECT DAYNAME('2025-07-09');

(a) Thursday **(b)** Saturday **(c)** Wednesday **(d)** Sunday

5. Table STUDENT
RollNo | Name | City | Marks
1 | Gita | Surat | 85
2 | Vikram | Mysuru | 68
3 | Asha | Delhi | 89
4 | Rohan | Surat | NULL
5 | Zoya | Mysuru | NULL
6 | Arjun | Surat | 94
What does this query return?
SELECT COUNT(DISTINCT City) FROM STUDENT;

(a) 6 **(b)** 5 **(c)** 4 **(d)** 3

6. Table STUDENT
RollNo | Name | City | Marks
1 | Zoya | Shimla | 86
2 | Kabir | Shimla | 74
3 | Karan | Kochi | 99
4 | Manav | Delhi | 96
5 | Tara | Delhi | 90
How many rows does this query return?
SELECT City, COUNT(*) FROM STUDENT GROUP BY City HAVING COUNT(*) > 1;

(a) 1 **(b)** 2 **(c)** 3 **(d)** 5

7. Table A has 2 columns and 3 rows; table B has 4 columns and 6 rows. What are the degree and cardinality of their Cartesian product A × B?

(a) degree 4, cardinality 18 **(b)** degree 8, cardinality 18

(c) degree 6, cardinality 18 **(d)** degree 6, cardinality 21

8. Which would you use in a query to get the number of rows in a table?

(a) NOW() **(b)** COUNT(*) **(c)** AVG() **(d)** MAX()

Section B — Short answer 8 × 2 = 16 marks

9. Name the three categories of single row functions in MySQL and give one example of each.

10. Write the output of:
SELECT ROUND(861.398, 1);

11. The text below has 4 spaces before the word and 3 after it. Write the output of:
SELECT LENGTH(RTRIM(' Monitor '));

12. Write the output of:
SELECT LOWER(RIGHT('Software', 2));

13. Write the output of:
SELECT MONTH('2026-08-12');

14. Table ITEM
ICode | IName | Store | Price
I01 | Crayons | East | 405
I02 | Eraser | West | 35
I03 | Glue | East | 490
I04 | Pen | North | 355
I05 | Notebook | North | 180
Write the output of:
SELECT MIN(Price) FROM ITEM WHERE Store = 'North';

15. Table STUDENT

RollNo | Name | City | Marks

1 | Sana | Jaipur | 99

2 | Gita | Shimla | 87

3 | Manav | Shimla | 84

4 | Tara | Shimla | 54

5 | Arjun | Indore | 60

Write the output of:

SELECT City, COUNT(*) FROM STUDENT GROUP BY City ORDER BY City;

16. Table STUDENT

RollNo | Name | City | Marks

1 | Diya | Surat | 98

2 | Meena | Pune | 94

3 | Ravi | Pune | 56

4 | Rohan | Shimla | 54

5 | Zoya | Surat | 61

Which values does this query show, in order? Write them separated by commas.

SELECT Name FROM STUDENT WHERE Marks > 56 ORDER BY Marks DESC;

Section C — Word problems — 4 × 4 = 16 marks

17. Explain GROUP BY and HAVING with a suitable example query.

18. Table ITEM

ICode | IName | Store | Price
I01 | Ruler | East | 90
I02 | Sharpener | South | 420
I03 | Notebook | North | 345
I04 | Scissors | East | 145
I05 | Crayons | South | 340
I06 | Pen | South | 95
I07 | Folder | North | 110

Write the output of each query.

(a) SELECT COUNT(*) FROM ITEM WHERE Store = 'South';

(b) SELECT SUM(Price) FROM ITEM WHERE Price >= 110;

(c) SELECT MAX(Price) - MIN(Price) FROM ITEM;

19. Table EMPLOYEE

EmpId | EName | DeptId
101 | Imran | D4
102 | Rohan | D4
103 | Farhan | D3
104 | Pooja | D4
105 | Isha | D2

Table DEPT

DeptId | DName
D1 | Support
D2 | Training
D3 | Sales
D4 | Accounts

(a) Write the output of:

SELECT EName, DName FROM EMPLOYEE, DEPT WHERE EMPLOYEE.DeptId = DEPT.DeptId ORDER BY EName;

(b) How many rows would SELECT * FROM EMPLOYEE, DEPT; return?

20. Table ITEM

ICode | IName | Store | Price | StockDate
I01 | Glue | North | 25 | 2025-02-20
I02 | Diary | North | 235 | 2026-09-25
I03 | Notebook | North | 110 | 2025-10-10
I04 | Scissors | North | 365 | 2026-11-18
I05 | Stapler | South | 445 | 2025-02-26
I06 | Crayons | Central | 375 | 2026-02-14

Write SQL queries to:

(a) display the IName of the items whose Store is North, in alphabetical order;

(b) display each Store with the highest Price in it;

(c) display the IName and the year of StockDate of the items whose StockDate falls in February.

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Answer key

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Q	Answer	Working
1	**(d) gives one result for each row it is applied to**	—
2	**(c) 926.72**	ROUND keeps 2 decimal places, rounding a 5 or more up
3	**(a) pre**	3 letters from position 2: pre
4	**(c) Wednesday**	2025-07-09 falls on a Wednesday
5	**(d) 3**	COUNT(DISTINCT …) counts each different value once
6	**(b) 2**	5 rows make 3 groups; HAVING keeps the groups with more than 1
7	**(c) degree 6, cardinality 18**	columns add: 2 + 4; rows multiply: 3 × 6
8	**(b) COUNT(*)**	—
9	**Math (numeric) functions, e.g. ROUND(); text (string) functions, e.g. LENGTH(); date functions, e.g. MONTH().**	—
10	**861.4**	round 861.398 to 1 decimal place
11	**11**	RTRIM removes the trailing spaces; 7 letters + 4
12	**re**	RIGHT gives re; LOWER makes it small letters
13	**8**	2026-08-12: year 2026, month 8, day 12
14	**180**	Store = 'North': 355, 180
15	**City | COUNT(*) Indore | 1 Jaipur | 1 Shimla | 3**	one row for each group, in alphabetical order of the group
16	**Diya, Meena, Zoya**	Marks > 56, arranged highest first
17	**GROUP BY collects rows with the same value of a column into groups; an aggregate function then gives one value per group. HAVING keeps only the groups that satisfy a condition. Example: SELECT City, COUNT(*) FROM STUDENT GROUP BY City HAVING COUNT(*) > 2; lists each city with more than two students and the number of students.**	definition of each (2); a correct query (2)
18	**(a) 3; (b) 1360; (c) 330**	(b) adds the Price values of 110 or more; (c) is 420 − 90
19	**(a) EName | DName Farhan | Sales Imran | Accounts Isha | Training**	(a) an equi-join keeps only the pairs with matching DeptId, here sorted by EName; (b) the Cartesian product has 5 × 4 rows

Q	Answer	Working
	Pooja | Accounts **Rohan | Accounts** **(b) 20**	
20	**(a) SELECT IName FROM ITEM WHERE Store = 'North' ORDER BY IName;** **(b) SELECT Store, MAX(Price) FROM ITEM GROUP BY Store;** **(c) SELECT IName, YEAR(StockDate) FROM ITEM WHERE MONTH(StockDate) = 2;**	any equivalent query is correct (for example, ORDER BY … ASC in (a))