

Single Choice Questions (10 × 1 = 10 Marks)

Choose the correct option from the given choices:

1. **Which clause is used to filter groups?**
 - a) WHERE
 - b) GROUP BY
 - c) HAVING
 - d) ORDER BY
2. **Which of the following is not a valid data type in MySQL?**
 - a) VARCHAR
 - b) NUMERIC
 - c) STRING
 - d) DATE
3. **Which keyword is used to eliminate duplicate values?**
 - a) REMOVE
 - b) DELETE
 - c) UNIQUE
 - d) DISTINCT
4. **Which command is used to delete all rows from a table?**
 - a) DROP
 - b) DELETE
 - c) REMOVE
 - d) TRUNCATE
5. **The default sort order of ORDER BY is:**
 - a) DESC
 - b) NONE
 - c) ASC
 - d) RANDOM
6. **Which function is used to count rows in SQL?**
 - a) COUNT()
 - b) SUM()
 - c) LENGTH()
 - d) TOTAL()
7. **Which keyword is used to rename a table?**
 - a) CHANGE
 - b) ALTER
 - c) MODIFY
 - d) RENAME
8. **Which operator is used to check if a value lies within a range?**
 - a) BETWEEN
 - b) IN
 - c) LIKE
 - d) LIMIT

9. Which command is used to view the structure of a table?

- a) SHOW TABLE
- b) SELECT *
- c) DESCRIBE
- d) VIEW

10. What does the NULL keyword represent in SQL?

- a) Zero
- b) Empty String
- c) No Value
- d) Default Value

Descriptive Questions (10 × 3 = 30 Marks)

Answer the following in brief (2–3 lines):

11. What is the difference between DELETE and DROP?

Ans : **Delete** - It removes rows from a table but retains the table structure.
Drop - deletes the entire table including its structure.

12. Write a query to display all student names from the students table.

Ans : select sname from student;

13. Explain the use of the GROUP BY clause with an example.

Ans : The GROUP BY clause in SQL is a powerful function used to group rows from a table based on the values of one or more columns. It is often used in conjunction with aggregate functions (such as COUNT, SUM, AVG, MAX, or MIN) to perform calculations on these grouped data.

Example : select gender, count(gender) from student group by gender;

14. How do you update a teacher's salary to 60000 where tid=3?

Ans : update teacher set salary = 60000 where tid = 3;

15. What is the purpose of the NOT NULL constraint?

Ans : It ensures that the column cannot have a null or empty value.

16. Write a query to create a table subjects with id, name, and credit columns.

Ans : create table subjects (
id int primary key,
name varchar(50),
credit int);

17. How do you remove a column from a table in MySQL?

Ans : alter table table_name drop column column_name;

18. Explain the purpose of JOIN in MySQL.

Ans : It is used to combine rows from two or more tables based on a related column.

19. What is the difference between CHAR and VARCHAR?

Ans :

Char - It is fixed-length, uses full space even if content is shorter.

VARCHAR - It is variable-length, uses only the required space.

20. How do you insert multiple records into a table in one query?

Ans : insert into student (sid, sname, age, gender, cid)
values (1, 'sameer', 18, 'm', 2), (2, 'sana', 19, 'f', 3);

Scenario Based question (10 x 3 = 30 marks)

Use the following tables:

- students(sid, sname, age, gender, cid)
- teachers(tid, tname, salary)
- courses(cid, cname, duration, fees, tid)

21. Write a query to list all student names with the name of the course they are enrolled in.

Ans : select s.sname, c.cname
from student as s
join course as c
on s.cid = c.cid;

22. List all teachers with the names of courses they are teaching.

Ans : select t.tname, c.cname
from teacher as t
join course as c
on t.cid = c.cid;

23. Display all students along with their teacher's name (through course linkage).

Ans : select s.sname, t.tname
from student as s
join teacher as t
on s.cid = t.cid;

24. Find the total number of students enrolled in each course.

Ans : select c.cname, count(s.sid)
from course as c
left join student as s
on c.cid = s.cid;

25. Display all courses that have no students enrolled.

Ans : select c.cname
from course as c
left join student as s
on c.cid = s.cid
where s.sid is null;

26. List courses and their teacher names where course duration is more than 3 months.

Ans : select c.cname, t.tname
from course as c
join teacher as t
on c.cid = t.tid
where c.duration > "90 Days";

27. Show the average fees of all courses taught by each teacher.

Ans : select t.tname, avg(c.fees) as Average_Fees
from teacher as t
join course as c
on t.cid = c.cid
group by t.tname;

28. List all students who are not enrolled in any course.

Ans : select s.sname
from student as s
where s.cid is null;

29. Display the teacher with the highest number of students across all their courses.

Ans : select t.tname, count(s.sid) as student_count
from teachers t
join courses c on t.tid = c.tid
join students s on c.cid = s.cid
group by t.tname
order by student_count desc
limit 1;

30. Find students whose course fee is greater than 20,000 and taught by teachers with salary > 50,000.

Ans : select s.sname from student as s
join course as c on s.cid = c.cid
join teacher as t on c.cid = t.tid
where c.fees > 20000 and t.salary > 50000;