MySQL DBA (3 Years Experience) - Complete 60+ Interview Questions & Answers

1. What is MySQL architecture?

Client Layer, SQL Layer (Parser, Optimizer, Executor), Storage Engine Layer (InnoDB), File System.

2. Default storage engine?

InnoDB.

3. Why InnoDB over MyISAM?

ACID compliance, row-level locking, crash recovery, foreign keys.

4. What is ACID?

Atomicity, Consistency, Isolation, Durability.

5. Types of indexes?

Primary, Unique, Composite, Fulltext, Normal.

6. What is composite index?

Index created on multiple columns.

7. Explain leftmost prefix rule.

Composite index works only if query starts with first indexed column.

8. What is EXPLAIN?

Shows query execution plan.

9. Default isolation level?

Repeatable Read.

10. What is MVCC?

Multi-Version Concurrency Control for consistent reads.

11. What is deadlock?

Two transactions waiting on each other’s locks.

12. How to check deadlocks?

SHOW ENGINE INNODB STATUS;

13. What is slow query log?

Logs queries exceeding defined execution time.

14. What is innodb_buffer_pool_size?

Memory area caching data and indexes.

15. Ideal buffer pool size?

60–70% of server RAM.

16. What is replication?

Copying data from primary to replica.

17. Types of replication?

Asynchronous, Semi-synchronous, Group Replication.

18. How to check replication status?

SHOW SLAVE STATUS\G;

19. What is GTID?

Global Transaction Identifier.

20. What causes replication lag?

Heavy writes, slow replica, missing indexes.

21. Logical vs Physical backup?

mysqldump (logical), XtraBackup (physical).

22. What is binary log?

Logs database changes for replication and recovery.

23. What is point-in-time recovery?

Restore backup and apply binlogs until specific time.

24. How to detect long queries?

SHOW PROCESSLIST;

25. How to kill query?

KILL process_id;

26. What is partitioning?

Splitting large table into smaller parts.

27. What is sharding?

Distributing data across multiple servers.

28. Difference DELETE vs TRUNCATE?

DELETE logs row by row; TRUNCATE resets table quickly.

29. What is redo log?

Ensures durability during crash recovery.

30. What is undo log?

Used for rollback and MVCC.

31. Production DB slow. Steps?

Check CPU, Memory, Disk I/O, slow logs, EXPLAIN queries.

32. Replication lag troubleshooting?

Check slave status, system load, optimize queries.

33. Replication duplicate key error fix?

STOP SLAVE; SET GLOBAL sql_slave_skip_counter=1; START SLAVE;

34. Disk almost full. Action?

Purge binary logs, clean backups, check large tables.

35. Zero downtime schema change?

Use pt-online-schema-change or MySQL online DDL.

36. Handling deadlocks?

Check InnoDB status, ensure consistent transaction order.

37. Inserts slow. Why?

Index overhead, foreign keys, disk I/O.

38. Move DB to new server?

Backup, restore, setup replication, switch traffic.

39. Buffer pool hit ratio low?

Increase buffer pool size.

40. Secure MySQL server?

Disable remote root, SSL, firewall, least privilege.

41. Master down. What next?

Promote replica and redirect application.

42. Detect blocking queries?

Query information_schema.innodb_trx.

43. Auto increment contention?

Set innodb_autoinc_lock_mode=2.

44. Reduce replication lag?

Enable parallel workers.

45. What is doublewrite buffer?

Prevents partial page corruption.

46. Check index usage?

SHOW INDEX FROM table_name;

47. Reduce lock contention?

Proper indexing, smaller transactions.

48. Monitor MySQL performance?

Performance_schema, slow logs, monitoring tools.

49. Crash recovery process?

Redo committed transactions, rollback incomplete ones.

50. What is clustered index?

Primary key index storing table data.

51. What is non-clustered index?

Secondary index storing pointer to primary key.

52. What is connection pooling?

Reusing DB connections.

53. What is tmp_table_size?

Memory allocated for temporary tables.

54. What is read-write splitting?

Writes to primary, reads to replica.

55. What is failover?

Automatic switch to replica on failure.

56. How to find table size?

Query information_schema.tables.

57. How to optimize large table?

Partitioning, indexing, archiving.

58. How to find unused indexes?

Use performance_schema or monitoring tools.

59. What is group replication?

MySQL high availability solution.

60. Best practices for production DBA?

Regular backups, monitoring, tuning, security hardening.

61. What is performance_schema?

Schema for monitoring internal performance metrics.

62. What is event scheduler?

MySQL feature to schedule jobs.

63. What is foreign key constraint?

Maintains referential integrity.

64. How to check open connections?

SHOW STATUS LIKE 'Threads_connected';

65. What is query optimization?

Improving query performance using indexing and tuning.