**Interview Questions (with brief answers)**

1. **What is data migration?**  
   Moving data from one system/database to another, often involving transformation.
2. **How do you ensure data integrity during migration?**  
   Use constraints, validation scripts, checksums, and row counts.
3. **What is the role of ETL?**  
   Extract → Transform → Load. Ensures clean, consistent, structured migration.
4. **How do you handle mismatched data types?**  
   Use CAST / CONVERT, create staging tables, validate after conversion.
5. **What if source data violates constraints?**  
   Fix in staging: remove duplicates, replace invalid values, or log & reject bad rows.
6. **How do you validate post-migration results?**  
   Row counts, data sampling, checksum/hash totals, business logic checks.
7. **What are surrogate keys and why use them?**  
   Artificial primary keys (e.g., auto-increment IDs). Useful when natural keys are unreliable or composite.
8. **What is a staging table?**  
   Temporary holding area to clean/transform before final insert.
9. **How do you handle NULL values in migration?**  
   Replace with defaults, leave as NULL if business logic allows, or flag them.
10. **What is the difference between soft and hard delete in data transfer?**

* *Soft delete*: mark row inactive (e.g., is\_deleted = 1).
* *Hard delete*: permanently remove the row.