Most Asked Question in Technical Test

Programming:

1. Difference between synchronous and asynchronous programming.What are Promises in JavaScript?
2. What is the difference between var, let, and const in JavaScript?
3. What is the purpose of REST APIs? What is the difference between HTTP and HTTPS?How do HTTP methods (GET, POST, PUT, DELETE) relate to REST?
4. Write a function to check if a number is prime.
5. What is the difference between functional and object-oriented programming? What are the four pillars of Object-Oriented Programming (OOP)?
6. What is Hoisting,Closure in JavaScript?
7. How does the JavaScript event loop work?
8. Write a function to reverse a string without using built-in method

Database:

9. What are the key differences between SQL and NoSQL databases?
10. What is the difference between cookies, localStorage, and sessionStorage?
11. What is CORS (Cross-Origin Resource Sharing), and why is it important?
12. Write a query to find the second highest salary in a table named employees.
13. Explain database normalization and its advantages.
14. What are ACID properties in databases?
15. What are database indexes, and how do they improve performance?

Data Structures and Algorithms:

16. Write a function to sort an array using the merge sort algorithm.
17. Explain the difference between a stack and a queue with examples.
18. What is a binary search, and how does it work?
19. Write a function to find the largest element in an array.
20. What is a hash table, and how is it used in programming?
21. Explain the time complexity of common sorting algorithms (e.g., bubble sort, quick sort, merge sort).
22. Write a program to find the Fibonacci sequence up to a given number.

Version Control:

23. What is version control, and why is Git so popular for version control?
24. Explain the difference between Git and GitHub.
25. What are Git branches, and how are they used?
26. How do you resolve merge conflicts in Git?
27. What is the purpose of Git tags, and when should you use them?

Development Tools:

28. What are the advantages of using Docker in software development?
29. Explain the difference between virtual machines and containers.
30. What is CI/CD, and why is it important in software development?
31. What are some common tools used for CI/CD pipelines?
32. How does Kubernetes complement Docker?

Methodologies:

33. Explain Agile methodology and its advantages in software development.
34. What is Scrum, and how does it differ from Kanban?
35. What are user stories, and why are they important in Agile?
36. How do daily standups improve team collaboration in Agile? What is MVC architecture.
37. What is a sprint retrospective, and how does it help the team?

Programming Practice:

38. Write a program to check if a given string is a palindrome.
39. Explain the difference between pass-by-value and pass-by-reference with examples.
40. Write a program to count the number of vowels in a string.
41. What is recursion? Write a recursive function to calculate the factorial of a number.
42. Write a program to find the GCD (Greatest Common Divisor) of two numbers.

Networking:

43. What is an IP address? Explain the difference between IPv4 and IPv6.
44. What are the roles of DNS (Domain Name System) in networking? How does it work?
45. Differences between TCP and UDP. Provide examples of applications that use each protocol.
46. What is a subnet, and why is subnetting used?
47. Explain the three-way handshake in TCP.
48. What is NAT (Network Address Translation), and how does it work?
49. Explain the OSI model and its layers.

Operating Systems:

50. What are the differences between process and thread? How does multithreading improve performance?
51. What is a deadlock? Describe the conditions required for a deadlock to occur.
52. What is virtual memory, and why is it used?
53. Explain the difference between paging and segmentation in operating systems.
54. What is a file system, and how does it manage data storage?
55. Explain context switching in operating systems.
56. What is the purpose of an operating system kernel?

Security:

57. Your team lead has requested you to secure an API endpoint. What steps would you take to ensure security?
58. What is HTTPS, and how does it differ from HTTP?
59. Explain the concept of encryption and its types (e.g., symmetric and asymmetric).
60. What is a firewall, and how does it protect a network?
61. Explain the concept of authentication and authorization.
62. What is SQL injection, and how can you prevent it?
63. What is XSS (Cross-Site Scripting), and how can you prevent it?
64. What are some common security measures for securing web applications?

Behavioral Questions:

65. Tell me about a time when you faced a challenge while coding and how you overcame it.
66. How do you prioritize tasks when working on multiple projects?
67. Describe a situation where you had to work with a difficult teammate and how you handled it.