**HTML (Hypertext Markup Language)**

1. What is HTML?
2. What are the different types of lists in HTML?
3. What is the difference between <div> and <span> in HTML?
4. What is the purpose of the <head> tag in HTML?
5. What are semantic elements in HTML?
6. Explain the difference between inline and block-level elements.
7. What is the purpose of the <meta> tag?
8. What are the common types of form elements in HTML?
9. How do you create hyperlinks in HTML?
10. What is the use of the <iframe> tag?
11. What is the difference between <strong> and <b> tags?
12. What is the difference between <em> and <i> tags?
13. What is the purpose of the <link> tag in HTML?
14. How do you include an image in HTML?
15. What is an HTML5 doctype and why is it important?
16. What is the difference between <head> and <body> in HTML?
17. What is the <canvas> element used for?
18. What are the different input types available in HTML5?
19. What is the difference between the <ul> and <ol> tags?
20. What is the <article> element used for in HTML5?
21. Explain the <header>, <footer>, <section>, and <nav> elements.
22. What is the purpose of the <data> element in HTML5?
23. What is the difference between <script> and <noscript> tags?
24. What is the purpose of the contenteditable attribute in HTML?
25. What is the <picture> element and why would you use it?

### ****CSS (Cascading Style Sheets)****

1. What is CSS?
2. What is the difference between class and id selectors in CSS?
3. What are CSS box-model properties?
4. What is the purpose of the position property in CSS?
5. What are the different types of CSS positioning (relative, absolute, fixed, sticky)?
6. What is the z-index property in CSS?
7. What are pseudo-classes and pseudo-elements in CSS? Give examples.
8. What is the difference between margin and padding in CSS?
9. How do you create a responsive layout using CSS?
10. What is Flexbox and how is it used in CSS?
11. What is the CSS Grid layout? How does it differ from Flexbox?
12. What is the difference between visibility and display in CSS?
13. What are media queries in CSS and how are they used?
14. What is the difference between em, rem, and px in CSS?
15. How can you center a div element both vertically and horizontally using CSS?
16. What is the purpose of the overflow property in CSS?
17. What are CSS transitions? How are they different from animations?
18. What is the @font-face rule in CSS?
19. How can you apply styles to specific elements using CSS specificity?
20. What is the box-sizing property in CSS?
21. What is the purpose of the calc() function in CSS?
22. What are CSS variables and how are they defined and used?
23. How do you implement CSS animations?
24. What is the float property in CSS and how is it used?
25. What is the purpose of the clear property in CSS?

### ****JavaScript****

1. What is JavaScript and what are its main uses?
2. What are the different data types in JavaScript?
3. What is the difference between let, const, and var in JavaScript?
4. What are closures in JavaScript?
5. What is a callback function in JavaScript?
6. Explain the concept of promises in JavaScript.
7. What is the purpose of the async and await keywords?
8. What is the difference between synchronous and asynchronous programming?
9. What is the this keyword in JavaScript?
10. What are the different ways to declare functions in JavaScript?
11. What is hoisting in JavaScript?
12. What are JavaScript events and event listeners?
13. Explain event delegation in JavaScript.
14. What is the difference between null and undefined in JavaScript?
15. What are JavaScript arrays and how do you manipulate them?
16. What are objects in JavaScript?
17. How do you define and use classes in JavaScript?
18. What is the purpose of the bind(), call(), and apply() methods in JavaScript?
19. What is the difference between == and === in JavaScript?
20. What is the purpose of the JSON.stringify() and JSON.parse() methods?
21. What are arrow functions in JavaScript? How do they differ from regular functions?
22. What is the difference between forEach(), map(), filter(), and reduce() methods in JavaScript?
23. What is the event loop in JavaScript?
24. What is the difference between a deep copy and a shallow copy in JavaScript?
25. What are the advantages of using localStorage and sessionStorage in JavaScript?

#### ****Angular Fundamentals****

1. What is Angular and how does it differ from other JavaScript frameworks?
2. What is the architecture of an Angular application?
3. What are components in Angular? How are they different from directives?
4. What is data binding in Angular and what are its types?
5. Explain the concept of directives in Angular. What are the different types of directives?
6. What is the purpose of the ngIf directive in Angular?
7. How does the ngFor directive work in Angular?
8. What are Angular services and how do you inject them into components?
9. What is dependency injection in Angular?
10. How does Angular routing work? What is the purpose of RouterModule?
11. What is lazy loading in Angular, and why is it useful?
12. What is Angular's change detection mechanism and how does it work?
13. How do you optimize Angular applications for performance?
14. What is the trackBy function in ngFor?
15. What are lifecycle hooks in Angular, and can you explain some of them?
16. How do you handle form validation in Angular? Can you provide an example?
17. What is the difference between template-driven forms and reactive forms in Angular?
18. What are observables in Angular, and how do they differ from promises?
19. How do you manage state in Angular applications?
20. What is Angular Universal and how do you use it for server-side rendering?
21. What is the purpose of ng-content in Angular, and how is it used?
22. What is the async pipe, and how is it used in Angular templates?
23. How do you create a custom directive in Angular? Explain the steps.
24. What is the difference between ViewChild and ContentChild decorators in Angular?
25. How does Angular handle two-way data binding?
26. What is Angular's ngOnInit() lifecycle hook, and when does it get called?
27. How do you test a service in Angular?
28. What are the advantages of using Angular’s Ahead-of-Time (AOT) compilation over Just-in-Time (JIT) compilation?
29. What is the difference between CanActivate, CanActivateChild, CanDeactivate, and Resolve route guards?
30. What is the purpose of ngOnDestroy() and when is it called in Angular components?
31. How would you implement debouncing or throttling in Angular using RxJS?
32. What is the purpose of ngOnChanges() lifecycle hook in Angular?
33. How do you use the Renderer2 service in Angular to modify the DOM safely?
34. What are Angular pipes, and how do you use them?
35. How do you create a custom pipe in Angular?

#### ****Services and Dependency Injection****

1. What is Dependency Injection in Angular, and how does it work?
2. How do you provide services in Angular? Can you explain the different ways to inject services into components?
3. What is the purpose of Angular's providedIn property in services?
4. Can you explain the inject() function and its usage in Angular?

#### ****Routing****

1. How do you configure routes in Angular using RouterModule?
2. How do you pass data to a route in Angular?
3. How does Angular handle routing with query parameters?
4. What are Angular’s route guards, and how do you implement them?
5. What is lazy loading in Angular, and why is it beneficial?

#### ****Testing in Angular****

1. What is Angular testing, and what are the common testing tools used?
2. What is the difference between unit testing and end-to-end testing in Angular?
3. How do you write unit tests for Angular components?
4. How would you test an Angular service with dependencies?
5. What is Jasmine and Karma in Angular testing?
6. How do you mock dependencies when testing Angular components and services?
7. What is TestBed in Angular testing, and how do you use it?

#### ****Performance Optimization****

1. How do you optimize the performance of an Angular application?
2. How do you lazy load modules in Angular?
3. What is change detection, and how do you optimize it in Angular applications?
4. What is the purpose of trackBy in ngFor for performance optimization?

#### ****State Management****

1. What is NgRx, and how is it used for state management in Angular?
2. Can you explain the store pattern in NgRx and how actions and reducers work?
3. What is the purpose of effects in NgRx?
4. How would you implement local or session storage in Angular applications?

#### ****Directives****

1. What is the difference between structural directives (like ngIf, ngFor) and attribute directives (like ngClass, ngStyle)?
2. What is a ng-template, and how is it used with structural directives?

#### ****RxJS and Observables****

1. What are observables in Angular, and how do they work?
2. What are the different RxJS operators you commonly use in Angular applications? Give examples.
3. How do you handle errors in observables in Angular?
4. What is the difference between Subject, BehaviorSubject, and ReplaySubject in Angular?

#### ****Forms and Validation****

1. How do you manage form state (dirty, touched, pristine, valid) in Angular forms?
2. What are form arrays in Angular, and how do you use them?
3. What is the role of FormBuilder in Angular forms?

#### ****Miscellaneous****

1. How do you handle authentication and authorization in Angular applications?
2. How do you handle errors globally in Angular applications (using ErrorHandler service)?
3. What are Angular guards, and how do you implement them for route protection?
4. What is Angular Universal, and how does it enable server-side rendering (SSR)?
5. How do you implement routing with query parameters in Angular?
6. What are Angular modules, and how do you structure an Angular application using modules?
7. How do you use Angular animations to create visual effects in applications?