

B. Sc. Part – II Semester – III
COMPUTER SCIENCE (Optional)
HTML & CSS (Web Technology)
Question Bank

Internet:

1. What is the Internet and how does it work?
2. Explain the difference between the Internet and the World Wide Web (WWW).
3. What is an IP address and what role does it play in internet communication?
4. Describe the purpose of DNS (Domain Name System) and how it works.
5. What is HTTP and HTTPS? Explain the difference between them.
6. Define what a web browser is and name some popular web browsers.
7. What is a web server and how does it differ from a regular server?
8. Explain the concept of cookies and their role in web browsing.
9. What is SSL/TLS and how does it contribute to internet security?
10. Describe the difference between IPv4 and IPv6.
11. What is the history and origin of the Internet?
12. How does data travel across the Internet from one device to another?
13. Explain the role of Internet Service Providers (ISPs) in providing access to the Internet.
14. What are the different types of Internet connections available to users?
15. Describe the concept of net neutrality and its significance in Internet governance.
16. What is the Deep Web and how is it different from the Surface Web?
17. How does the Internet contribute to globalization and interconnectedness?
18. Discuss the importance of Internet protocols such as TCP/IP, HTTP, and FTP.
19. Explain the concept of Internet censorship and its implications on freedom of speech.
20. How does the Internet of Things (IoT) leverage the Internet to connect devices and enable smart functionalities?

Internet Basics:

1. What is the Internet and how does it differ from the World Wide Web?
2. How do devices connect to the Internet?
3. Explain the concept of IP addresses and their role in Internet communication.
4. What is the significance of domain names on the Internet?
5. Describe the function of DNS (Domain Name System) in Internet browsing.

Internet Infrastructure: 6. How are data packets routed across the Internet?

7. Discuss the role of Internet Exchange Points (IXPs) in facilitating Internet traffic exchange.
8. What are the main components of the Internet backbone?
9. Explain the difference between IPv4 and IPv6 addressing schemes.
10. How do submarine cables contribute to global Internet connectivity?

Internet Protocols: 11. What is TCP/IP and why is it important for Internet communication?

12. Describe the HTTP request-response cycle.
13. How does FTP (File Transfer Protocol) facilitate file transfer over the Internet?
14. What is SMTP (Simple Mail Transfer Protocol) and its role in email communication?

15. Explain the purpose of ICMP (Internet Control Message Protocol) in Internet communication.

Internet Security: 16. Discuss common cybersecurity threats faced by Internet users.

17. How do SSL/TLS protocols ensure secure communication over the Internet?

18. What is a DDoS (Distributed Denial of Service) attack and how does it affect Internet services?

19. Describe the role of firewalls in Internet security.

20. Explain the concept of encryption and its importance for securing data transmitted over the Internet.

HTML:

1. What is HTML and what does it stand for?
2. Explain the purpose of HTML tags.
3. What is the difference between HTML elements and HTML attributes?
4. How do you create a hyperlink in HTML?
5. What is the purpose of the "alt" attribute in the tag?
6. Describe the difference between HTML5 and previous versions of HTML.
7. How do you embed a video in an HTML document?
8. What are semantic elements in HTML? Provide examples.
9. Explain the difference between <div> and tags in HTML.
10. How do you create a table in HTML?
11. Describe the structure of an HTML document.
12. What is the role of the <!DOCTYPE> declaration in HTML?
13. How do you create a basic HTML page from scratch?
14. Differentiate between block-level and inline elements in HTML.
15. What are empty elements in HTML? Provide examples.
16. Explain the purpose of the "id" and "class" attributes in HTML elements.
17. How do you create a hyperlink in HTML? What attributes does the <a> tag support?
18. What is the role of the "alt" attribute in the tag?
19. 11. Describe the structure of an HTML form.
20. How do you create text input fields, checkboxes, and radio buttons in HTML?
21. What is the purpose of the "label" element in HTML forms?
22. Explain the difference between the "GET" and "POST" methods in HTML forms.
23. How do you create a dropdown menu (select element) in HTML?
24. What are some new semantic elements introduced in HTML5? Provide examples.
25. Describe the purpose of the <canvas> and <video> elements in HTML5.
26. How do you embed audio content using HTML5?
27. What is the purpose of the "placeholder" attribute in HTML5 form elements?
28. Explain the role of the <meta> tag in HTML5 documents.
29. How can you make an HTML document more accessible to users with disabilities?
30. Describe the importance of using semantic HTML elements for accessibility.
31. What is ARIA (Accessible Rich Internet Applications) and how does it enhance HTML accessibility?
32. How do you provide alternative text for images in HTML for screen readers?
33. What are some best practices for designing accessible forms in HTML?

CSS:

1. What is CSS and what does it stand for?

2. Explain the purpose of CSS selectors.
3. How do you apply CSS styles inline?
4. What is the difference between padding and margin in CSS?
5. Describe the box model in CSS.
6. How do you center an element horizontally and vertically in CSS?
7. What is the difference between "display: block", "display: inline", and "display: inline-block"?
8. What is the purpose of the "z-index" property in CSS?
9. Explain the difference between "position: relative", "position: absolute", and "position: fixed" in CSS.
10. How do you add a background image to an HTML element using CSS?
11. What is CSS and what does it stand for?
12. How do you link an external CSS file to an HTML document?
13. Explain the difference between inline, internal, and external CSS.
14. Describe the purpose of CSS selectors and provide examples of different types of selectors.
15. What is the box model in CSS and how does it work?
16. CSS Properties and Selectors: 6. Discuss the difference between margin and padding in CSS.
17. How do you center an element horizontally and vertically using CSS?
18. Explain the difference between "display: block", "display: inline", and "display: inline-block".
19. What is the purpose of the "z-index" property in CSS?
20. Describe the difference between absolute and relative positioning in CSS.
21. Advanced CSS Techniques: 11. Explain the concept of CSS specificity and how it affects style precedence.
22. How do you create a CSS animation? Provide an example.
23. What are CSS preprocessors and what advantages do they offer over regular CSS?
24. Discuss the use of CSS frameworks like Bootstrap and Foundation in web development.
25. How can you implement responsive design using CSS media queries?
26. CSS Best Practices and Optimization: 16. Describe techniques for optimizing CSS performance on a website.
27. What are CSS resets and why are they used?
28. Explain the difference between CSS preprocessors and postprocessors.
29. Discuss the importance of using semantic HTML and CSS for accessibility and SEO.
30. How do you use vendor prefixes in CSS to ensure cross-browser compatibility?

JavaScript:

1. What is JavaScript and what is its role in web development?
2. Explain the difference between "==" and "===" in JavaScript.
3. What are the different data types supported by JavaScript?
4. How do you declare variables in JavaScript? Explain the difference between "var", "let", and "const".
5. What is the purpose of the "typeof" operator in JavaScript?
6. How do you create and call a function in JavaScript?
7. Explain the concept of scope in JavaScript.
8. What are closures in JavaScript? Provide an example.
9. Describe the difference between synchronous and asynchronous JavaScript code execution.
10. How do you handle errors in JavaScript?
11. What is JavaScript and what role does it play in web development?

12. How does JavaScript differ from other programming languages such as HTML and CSS?
13. Explain the difference between client-side and server-side JavaScript.
14. What are the basic data types in JavaScript?
15. How do you declare variables in JavaScript?
16. Syntax and Operators: 6. Describe the difference between "==" and "===" operators in JavaScript.
17. What are the various types of operators available in JavaScript?
18. Explain the purpose of conditional statements (if-else) in JavaScript.
19. How do you use loops (for, while) in JavaScript?
20. What is the ternary operator and how is it used in JavaScript?
21. Functions: 11. How do you define and call functions in JavaScript?
22. Explain the concept of function scope and variable hoisting in JavaScript.
23. What are callback functions and how are they used in JavaScript?
24. Describe the difference between function declarations and function expressions.
25. What are arrow functions and how do they differ from regular functions?
26. Objects and Classes: 16. What is an object in JavaScript and how do you create one?
27. Explain the concept of object-oriented programming (OOP) in JavaScript.
28. How do you access object properties and methods in JavaScript?
29. Describe the purpose of constructors and prototypes in JavaScript.
30. What are ES6 classes and how do you define them in JavaScript?
31. DOM Manipulation: 21. What is the DOM (Document Object Model) and how does JavaScript interact with it?
32. How do you select and manipulate HTML elements using JavaScript?
33. Explain the difference between innerHTML and textContent properties.
34. What are event listeners and how are they used to handle user interactions?
35. Describe the concept of event delegation in JavaScript.
36. Asynchronous JavaScript: 26. What is asynchronous programming and why is it important in JavaScript?
37. How do you use callbacks, promises, and async/await for asynchronous operations?
38. Explain the purpose of setTimeout and setInterval functions in JavaScript.
39. What are AJAX (Asynchronous JavaScript and XML) requests and how are they used?
40. Describe the Fetch API and its advantages over traditional AJAX requests.

Introduction to PHP:

Basics:

1. What is PHP and what does it stand for?
2. How does PHP differ from client-side scripting languages like JavaScript?
3. Describe the process of embedding PHP code within HTML documents.
4. What are the advantages of using PHP for web development?
5. How do you start and end a PHP script?
6. What does PHP stand for and what is its role in web development?
7. How do you start and end a PHP script?
8. What is the purpose of PHP tags <?php and ?>?
9. How do you output text or variables in PHP?
10. Explain the difference between single-line comments (//) and multi-line comments (/* */).
11. How do you declare variables in PHP?
12. Describe the difference between concatenation and interpolation in PHP strings.
13. What are the arithmetic operators in PHP and how do you use them?
14. How do you create an array in PHP?
15. Explain the concept of associative arrays in PHP and provide an example.
16. How do you write a conditional statement (if-else) in PHP?

17. What is the purpose of the switch statement in PHP?
18. How do you create a for loop in PHP?
19. Describe the role of functions in PHP and how to define a function.
20. What is the difference between return and echo in PHP functions?
21. How do you include external PHP files in your script?
22. Explain the purpose of the \$_GET and \$_POST superglobal arrays in PHP.
23. How do you handle form submissions in PHP?
24. What is a session in PHP and how do you start and destroy a session?
25. How do you connect to a MySQL database using PHP?

Variables and Data Types:

6. How do you declare variables in PHP?
7. What are the different data types supported by PHP?
8. Explain the difference between single quotes (') and double quotes (") in PHP strings.
9. How do you concatenate strings in PHP?
10. What is variable interpolation in PHP?
11. What is a variable in PHP and how do you declare one?
12. Explain the difference between single quotes (') and double quotes (") when assigning values to variables in PHP.
13. How do you assign a value to a variable in PHP?
14. Describe the naming conventions for variables in PHP.
15. What are the different data types supported by PHP?
16. How do you determine the data type of a variable in PHP?
17. Explain the concept of type juggling in PHP.
18. How do you convert one data type to another in PHP?
19. What is the purpose of NULL and how is it used in PHP variables?
20. How do you declare and use constants in PHP?
21. Describe the scope of variables in PHP.
22. Explain the difference between local, global, and static variables in PHP.
23. How do you unset a variable in PHP?
24. What is variable variable in PHP and how is it used?
25. Describe the purpose of the global keyword in PHP.

Control Structures:

11. Describe the purpose of conditional statements (if-else) in PHP.
12. How do you use loops (for, while, foreach) in PHP?
13. What is the switch statement and how is it used in PHP?
14. Explain the concept of short-circuit evaluation in PHP.
15. What is a control structure in PHP and why is it important?
16. Explain the purpose of conditional statements in PHP.
17. How do you write an if statement in PHP? Provide an example.
18. What are the different types of comparison operators used in PHP conditional statements?
19. Describe the syntax for an if-else statement in PHP.
20. What is the purpose of the switch statement in PHP? Provide an example.
21. How do you use logical operators (AND, OR, NOT) in PHP conditional statements?
22. Explain the concept of short-circuit evaluation in PHP.
23. How do you write a for loop in PHP? Provide an example.
24. Describe the syntax for a while loop in PHP.
25. What is the difference between a while loop and a do-while loop in PHP?
26. How do you use the break and continue statements in PHP loops?
27. Explain the concept of nested loops in PHP.

28. How do you iterate over arrays using foreach loop in PHP?
29. Describe the purpose of the foreach loop key-value pair syntax.

Functions:

15. How do you define and call functions in PHP?
16. Describe the difference between pass-by-value and pass-by-reference in PHP functions.
17. What are built-in PHP functions and how do you use them?
18. How do you return values from a PHP function?
19. Explain the concept of variable scope in PHP functions.
20. What is a function in PHP and why are they used?
21. How do you define a function in PHP? Provide an example.
22. Explain the difference between user-defined functions and built-in functions in PHP.
23. How do you call a function in PHP? Provide an example.
24. Describe the purpose of function parameters in PHP.
25. What are default parameter values in PHP functions and how do you use them?
26. How do you return a value from a PHP function? Provide an example.
27. What is variable scope in PHP functions?
28. Describe the difference between global and local variables in PHP functions.
29. How do you use the global keyword to access global variables within a function?
30. Explain the concept of variable-length argument lists (variadic functions) in PHP.
31. What is a recursive function in PHP? Provide an example.
32. How do you include a file containing a function definition in PHP?
33. Describe the purpose of anonymous functions (closures) in PHP.
34. How do you use the "use" keyword with closures in PHP?

Arrays:

20. What is an array in PHP and how do you create one?
21. Describe the difference between indexed arrays and associative arrays in PHP.
22. How do you access array elements in PHP?
23. Explain the purpose of array functions like array_push(), array_pop(), and array_merge().
24. What is multidimensional array and how is it used in PHP?
25. What is an array in PHP and why is it useful?
26. How do you declare an array in PHP? Provide examples for indexed and associative arrays.
27. Explain the difference between indexed arrays and associative arrays in PHP.
28. How do you access elements of an array in PHP?
29. Describe the purpose of array functions like array_push(), array_pop(), array_shift(), and array_unshift().
30. What is the difference between array_merge() and array_combine() in PHP?
31. How do you iterate over an array using a foreach loop in PHP?
32. Explain the concept of multidimensional arrays in PHP. Provide an example.
33. How do you check if a value exists in an array in PHP?
34. Describe the purpose of array_key_exists() and in_array() functions in PHP.
35. How do you sort an array in PHP? Provide examples for sorting in ascending and descending order.
36. What is the difference between sort(), asort(), and ksort() functions in PHP?
37. How do you remove duplicate values from an array in PHP?
38. Explain the purpose of array_slice() function in PHP.
39. How do you combine two arrays into one in PHP?

File Handling:

25. How do you open and read files in PHP?
26. Describe the purpose of file modes (r, w, a, etc.) in PHP file handling.
27. How do you write data to files using PHP?
28. Explain the difference between fopen() and file_get_contents() functions.
29. How do you handle file uploads in PHP?
30. What is file handling in PHP and why is it important?
31. How do you open a file for reading in PHP? Provide an example.
32. Describe the difference between "r", "w", and "a" modes when opening a file in PHP.
33. How do you read the contents of a file line by line in PHP?
34. Explain the purpose of the fgets() and fread() functions in PHP file handling.
35. How do you close an open file handle in PHP?
36. What is the purpose of file permissions and how do you set them in PHP?
37. How do you check if a file exists before attempting to open it in PHP?
38. Describe the purpose of the file_exists() and is_file() functions in PHP.
39. How do you create a new file and write data to it in PHP? Provide an example.
40. What is the difference between file_put_contents() and fwrite() functions in PHP?
41. How do you append data to an existing file in PHP?
42. Explain the concept of file locking in PHP and why it is important.
43. How do you delete a file in PHP? Provide an example.
44. Describe the purpose of the rename() and copy() functions in PHP file handling.

Database Interaction:

30. What are the different ways to connect to a database using PHP?
31. Describe the purpose of SQL injection and how to prevent it in PHP.
32. How do you execute SQL queries in PHP?
33. Explain the concept of prepared statements and why they are important in database interactions.
34. How do you fetch and display data from a database using PHP?
35. What is database interaction in PHP and why is it important?
36. How do you establish a connection to a MySQL database in PHP? Provide an example.
37. Describe the purpose of mysqli_connect() and mysqli_select_db() functions in PHP.
38. How do you execute SQL queries in PHP?
39. Explain the difference between mysqli_query() and mysqli_real_escape_string() functions in PHP.
40. What is SQL injection and how do you prevent it in PHP?
41. Describe the purpose of prepared statements in PHP database interactions.
42. How do you execute a prepared statement in PHP using mysqli_prepare() and mysqli_stmt_execute() functions?
43. How do you fetch and display data from a MySQL database in PHP?
44. Explain the purpose of mysqli_fetch_array(), mysqli_fetch_assoc(), and mysqli_fetch_object() functions in PHP.
45. How do you handle errors in PHP database interactions?
46. Describe the concept of transactions in PHP database interactions.
47. How do you perform CRUD (Create, Read, Update, Delete) operations in PHP using MySQL?
48. What is the purpose of mysqli_num_rows() function in PHP?
49. How do you close a database connection in PHP?