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Questions and Answers

1. What is server-side scripting? What are the advantages of server-side scripting?
   →Server-side scripting is when code runs on the web server to create webpages. The server processes requests, like fetching data, and sends the result to the browser.

   Advantages:

- Secure: Code isn't visible to users.
- Database access: Can store or get data.
- Custom content: Shows different pages for each user.
- Faster browsing: Reduces work for the user's device.

2. What is PHP? Explain the history of PHP.
   →PHP is a free programming language for making interactive websites. It's called Hypertext Preprocessor and works well with HTML and databases.
   History:

- Created in 1994 by Rasmus Lerdorf for his website.
- First named Personal Home Page Tools.
- Grew into a powerful language for web tasks.
- Today, used by many websites like forums and shops.

3. What is a variable? Write down the different rules to create a variable in PHP.
   →A variable stores data, like a number or word, for use in your code.
   Rules:

- Starts with $.
- First character after $ is a letter or underscore.
- No numbers at the start.
- Only letters, numbers, or underscores allowed.

   ```
   $name = "Sara";
   $age = 20;
   ```

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4. What is a super global variable in PHP? Explain the different types of super global variables in PHP.
   →Super global variables are special PHP variables you can use anywhere in your code. They hold data like user inputs or server info.

   Types:

- $_GET: Data from URLs.
- $_POST: Data from forms.
- $_REQUEST: Mix of $_GET, $_POST, and cookies.
- $_SESSION: User data for their visit.
- $_COOKIE: Data stored in the browser.
- $_FILES: Uploaded files.
- $_SERVER: Server details.
- $_ENV: System settings.
- $GLOBALS: All global variables.

5. Describe different PHP operators in PHP. Explain ternary operators.
   →Operators are symbols for math, comparisons, or logic.
   Types:

- Arithmetic: + (add), - (subtract), * (multiply), / (divide), % (remainder).
- Assignment: = (set), += (add and set), -= (subtract and set).
- Comparison: == (equal), === (exactly equal), != (not equal), <, >.
- Logical: && (and), || (or), ! (not).
- String: . (join strings), .= (add to string).
- Array: + (merge), == (compare).
  Ternary operator: A short if-else. Checks a condition and picks a value.

```
$age = 16;
$status = ($age >= 18) ? "Adult" : "Minor";
echo $status;
```

6. Describe different control structures in PHP.
   →Control structures choose or repeat code based on conditions.
   Types:

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- if/else/elseif: Runs code if true, else runs other code.
- switch: Selects code based on a value.
- for: Loops a set number of times.
- while: Loops while true.
- do...while: Loops at least once, then checks.
- foreach: Loops through arrays.

7. What is the use of foreach loop in PHP? Explain using examples.
   →The foreach loop goes through each item in an array, like reading a list.

   ```
   $fruits = array("Apple", "Banana", "Orange");
   foreach ($fruits as $fruit) {
   echo $fruit . " ";
   }
   ```

8. What are functions in PHP? How to use functions in PHP?
   →Functions are reusable code blocks you call by name. They save time by avoiding repeated code.

   ```
   function sayHello($name) {
   return "Hi, $name!";
   }
   echo sayHello("Tom");
   ```

9. What is an array? What are the different types of arrays in PHP? Explain with the help of examples.
   →An array holds multiple values in one variable, like a list.
   Types:

- Indexed: Uses numbers (0, 1, 2...) as keys.

  ```
  $days = array("Monday", "Tuesday", "Wednesday");
  echo $days[0];
  ```

- Associative: Uses words as keys.

  ```
  $scores = array("math" => 85, "english" => 90);
  ```

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```
echo $scores["math"];
```

- Multidimensional: Arrays inside arrays.

```
$classes = array(
array("Ali", 95),
array("Zara", 88)
);
echo $classes[1][1];
```

10. Define function overloading. How is function overloading handled in PHP? Explain with an example.
→Function overloading is having multiple functions with the same name but different inputs. PHP doesn't allow this directly but uses __call() to handle it.

```
class Test {
function __call($name, $args) {
echo "$name called with: ";
print_r($args);
}
}
$obj = new Test();
$obj->run(1, "test"); )
```

11. Explain the different array methods/functions used in PHP.
→Array functions help manage lists:

- count(): Counts items.
- array_push(): Adds to the end.
- array_pop(): Removes the last item.
- array_merge(): Joins arrays.
- sort(): Sorts in order.
- array_reverse(): Flips the order.

12. Describe Form Handling in PHP and Form validation in PHP.
→Form handling collects user inputs from forms using $_GET or $_POST. Validation checks if inputs are correct, like not empty.

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```
if ($_SERVER["REQUEST_METHOD"] == "POST") {
$email = $_POST["email"];
if (empty($email)) {
echo "Email is required";
} else {
echo "Got email: $email";
}
}
```

13. Describe the use case of time function in PHP.
→The time() function returns the current time as a number (timestamp). It's used for things like logging when a user visits.

```
echo time();
echo date("Y-m-d", time());
```

14. Describe file handling in PHP.
→File handling lets PHP read or write files, like saving user notes.
Functions:

- fopen(): Opens a file.
- fread(): Reads content.
- fwrite(): Writes content.
- fclose(): Closes the file.

```
$file = fopen("note.txt", "w");
fwrite($file, "Welcome");
fclose($file);
```

15. What are the different types of error in PHP? Explain how error handling is done in PHP.
→Errors are mistakes in code. Types:

- Parse: Bad syntax, stops everything.
- Fatal: Big error, like missing function, stops code.
- Warning: Issue but code runs, like a missing file.

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- Notice: Small issue, like unset variable.
  Error handling: Use try-catch or custom functions.

```
set_error_handler("myError");
function myError($num, $msg) {
echo "Error: $msg";
}
echo $noVar;
```

16. How file is uploaded in the server using PHP? Explain in detail using an example.
    →File uploading lets users send files to the server, like images. You need a form and PHP to move the file.

```
<form method="post" enctype="multipart/form-data">
 <input type="file" name="myfile">
 <input type="submit" name="submit">
 </form>
 <?php if (isset($_POST["submit"]))
{ $target = "uploads/" . $_FILES["myfile"]["name"];
move_uploaded_file($_FILES["myfile"]["tmp_name"], $target);
 echo "File uploaded";
 } ?>
```

17. What is a session? How does session work?
    →A session saves user data on the server during their visit, like their name. Start it with session_start().

```
session_start();
$_SESSION["user"] = "Lila";
echo $_SESSION["user"];
```

18. Describe the different session functions used in PHP.
    →Session functions manage user data:

- session_start(): Starts a session.

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- $_SESSION[]: Sets or gets data.
- session_destroy(): Ends a session.
- session_unset(): Clears session data.

19. How can you connect to a database using PHP? Give examples to support your answer.
→PHP connects to databases like MySQL to store or fetch data.

```
$conn = mysqli_connect("localhost", "root", "", "shop");
if (!$conn) {
die("Failed to connect");
}
echo "Connected";
```

20. What are the different SQL data types?
→SQL data types say what a column holds:

- INT: Numbers like 5.
- VARCHAR: Short text like "Bob".
- TEXT: Long text like notes.
- DATE: Dates like 2025-04-10.
- DATETIME: Date and time like 2025-04-10 15:00:00.
- FLOAT: Decimals like 2.99.
- BOOLEAN: True or false.

21. With a suitable example each, describe:
a. Data insertion using PHP:

→ Adds new data.

```
$sql = "INSERT INTO users (name) VALUES ('Emma')";
mysqli_query($conn, $sql);
```

b. Data Selection using PHP: Gets data.

```
$sql = "SELECT name FROM users";
$result = mysqli_query($conn, $sql);
```

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c. Data Update using PHP: Changes data.

```
$sql = "UPDATE users SET name='Liam' WHERE id=1";
mysqli_query($conn, $sql);
```

d. Data delete using PHP: Removes data.

```
$sql = "DELETE FROM users WHERE id=1";
mysqli_query($conn, $sql);
```

22. What are aggregate functions in MySQL?
→Aggregate functions calculate values across rows:

- COUNT(): Counts rows.
- SUM(): Adds numbers.
- AVG(): Finds average.
- MIN(): Gets smallest value.
- MAX(): Gets largest value.

23. Describe subqueries and joins using examples.

- Subquery: A query inside another to find specific data.

```
$sql = "SELECT name FROM users WHERE id = (SELECT user_id FROM orders WHERE order_id = 1)";
```

- Join: Links tables to combine data.

```
$sql = "SELECT users.name, orders.total FROM users INNER JOIN orders ON users.id = orders.user_id";
```

24. Difference between:
a) get and post:

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- GET: Data in URL, less secure, for searches.
- POST: Data hidden, more secure, for forms.

- b) time and strtotime:
- time(): Current time as a number.
- strtotime(): Turns text like "tomorrow" into a number.

- c) order by and group by:
- ORDER BY: Sorts rows.
- GROUP BY: Groups rows for calculations.

- d) include and require:
- include: Warns if file missing, continues.
- require: Stops if file missing.

- e) include_once and require_once:
- Both load a file only once.

- f) echo and print:
- echo: Shows text, fast.
- print: Shows text, returns 1.

- g) cookie and session:
- Cookie: Stored in browser, lasts longer.
- Session: Stored on server, ends after visit.