Solution Script

1.What is image map in HTML? Explain with an example.

The HTML <map> tag defines an image map. An image map is an image with clickable areas. The areas are defined with one or more <area> tags.

Example

Here is the HTML source code for a image map:

```
<img src="workplace.jpg" alt="Workplace" usemap="#workmap">

<map name="workmap">

  <area shape="rect" coords="34,44,270,350" alt="Computer" href=”#”>

</map>
```

4. What are the benefits of CSS Sprites?

Benefits of using CSS sprites are:

1. It is a technique where one has a large image containing a set of small images. Those images can be broken down with the help of CSS to disintegrate into multiple images.
2. It helps large images or pages to load faster hence, saving a lot of time.
3. It cuts back HTTP requests. It is also flexible over website’s layout and design.
4. The concept of CSS sprites is used to reduce the loading time for a web page because it combines the various small images into one image. It reduces the number of http requests and hence the loading time.

5. What are the limitations of CSS?

CSS has various limitations as a programming language thats are as follows:

1. CSS cannot perform any logical operations like if/else or for/while or +/-.
2. We can not read any files using CSS.
3. It can not interact with databases.
4. CSS can not request a web page.

5.Explain passed by value and passed by reference

In **pass by value**, the value of a function parameter is copied to another location of the memory. When accessing or modifying the variable within the function, it accesses only the copy. Thus, there is no effect on the original value. Suppose, the variable value stores integer 5. The findNewValue is a function. The value is passed to that function. In the function, the value is then copied to a new memory location called newValue. The function then returns an integer. And, this integer is stored in the newValue variable of the main function. Finally, the newValue is printed on the console.

In **pass by reference**, the memory address is passed to that function. In other words, the function gets access to the actual variable. An example is as follows. The variable value stores integer 5. The findNewValue is a function. The address of the memory location 'value' is passed to that function. Thus, the function gets this value. The newValue is a pointer. It points to the original memory location called value. The function adds 5 to the original value pointed by newValue. Then, the calculated value is returned and stored into the newValue variable. Finally, the newValue is printed on the console.

7. What is an Immediately Invoked Function in JavaScript?

An Immediate-Invoked Function Expression (IIFE) is a function that is executed instantly after it's defined. This pattern has been used to alias global variables, make variables and functions private and to ensure asynchronous code in loops are executed correctly.

9. Explain Higher Order Functions in JavaScript.

A function that accepts and/or returns another function is called a higher-order function. It's higher-order because instead of strings, numbers, or Booleans, it goes higher to operate on functions. Pretty meta. With functions in JavaScript, you can Store them as variables Use them in arrays Assign them as object properties (methods) Pass them as arguments Return them from other functions

10. List some features of WordPress with examples

WordPress some Features are listed below with example:

Easily Manage Website Content : Easily manage our website's content as much as we want, whenever we want. With the intuitive WordPress content management system, we can login from any modern browser and make changes to our website without programming knowledge.

Unlimited Pages, Posts, Products & More : Don't limit - we can add images, text, files, links, and embed media right on the content areas of our pages anytime we want and we don't restrict the number of pages, posts, or products that we can add.

Integrated news and blog postings : Take advantage of built-in blogging and blog category management by easily adding/editing/deleting content as per our needs. Add news articles on an ongoing basis directly from our browser!

Flexible post scheduling : Posts can be scheduled to appear at specific dates/times so we can create content ahead of time and schedule it to be published. Create pages and posts, leave them as drafts until we're ready to publish them.

Restore Deleted Pages & Rollback Versioning : we can easily restore deleted page content (before it is deleted permanently) and even roll back page text to previous versions using built-in version control features. Save pages so that we can see what they look like or publish them live whenever we need.

11. What is a plugin in WordPress? List plugin that comes with WordPress.

In WordPress, a plugin is a small software application that extends the features and functions of a WordPress website. Here is some plugin that comes with wp:

- Yoast SEO.
- Jetpack. Jetpack – WP Security, Backup, Speed, & Growth. ...
- Akismet. Akismet Spam Protection. ...
- Wordfence Security. Wordfence Security – Firewall & Malware Scan. ...
- Contact Form 7.
- WooCommerce.
- Google Analytics for WordPress. ...
- All in One SEO Pack.

12. What are the types of hooks in WP and what are their functions?

WordPress hook is a feature that allows to manipulate a procedure without modifying the file on WordPress core.there are two types of hook in wp. They are action (action hook) and filter (filter hook). Actions let do something at certain predefined points in the WordPress runtime, while Filters let modify any data processed by WordPress and return it.

13. How do I enable debug mode in WordPress?

i do enable mode in WordPress in few steps:

- Log into my server via SSH or FTP.
- Edit the wp-config.
- php file using SSH or your FTP client.
- Near the bottom of the file you'll see the following: define('WP_DEBUG', false); Adjust that line to these three lines: ...
- When an error is thrown in WordPress, it will write to a file titled debug. log.

14. What is the difference between "echo" and "print" in PHP?

Echo

echo is a statement, which is used to display the output.

echo can be used with or without parentheses.

echo does not return any value.

We can pass multiple strings separated by comma (,) in echo.

echo is faster than print statement.

Print

print is also a statement, used as an alternative to echo at many times to display the output.

print can be used with or without parentheses.

print always returns an integer value, which is 1.

Using print, we cannot pass multiple arguments.

print is slower than echo statement.

15. What is the difference between “$message” and “$$message”?

$message is used to store variable data. $$message can be used to store variable of a variable. Data stored in $message is fixed while data stored in $$message can be changed dynamically.

16. What are magic constants in PHP?

Magic constants are the predefined constants in PHP which get changed on the basis of their use. They start with double underscore (__) and ends with double underscore.

There are nine magic constants in PHP. In which eight magic constants start and end with double underscores (__).

__LINE__

__FILE__

__DIR__

__FUNCTION__

__CLASS__

__TRAIT__

__METHOD__

__NAMESPACE__

ClassName::class

17. What are the various types of relationships in Database? Define them.

There are three types of relationships. These are

One-to-One Relationship : Such a relationship exists when each record of one table is related to only one record of the other table.

Example: One person has one passport.

One-to-Many Relationship : Such a relationship exists when each record of one table can be related to one or more than one record of the other table.

Example: One customer has many account(bank).

Many-to-Many Relationship : Such a relationship exists when each record of the first table can be related to one or more than one record of the second table and a single record of the second table can be related to one or more than one record of the first table.

Example: many customer buys nth product.

18. Explain Normalization and De-Normalization with examples.

Denormalization is a database optimization technique in which we add redundant data to one or more tables. This can help us avoid costly joins in a relational database.

Normalization is a database design technique that organizes tables in a manner that reduces redundancy dependency of data. Normalization divides larger tables into smaller tables and links them using relationships. It redundance data and stored logically.

de-normalization Example: Here S= Student, C=Course, F=Faculty.

S_id	S_name	C_id	C_name	F_id	F_name	Salary

This a table of a database. If we put all the values in a table that faces many problem. If we want only add a student that we can't add. Because it's needs a course name and faculty name that's not need at the moment. That is a problem.to solve the problem we need to know normalization.so it's de-normalization.

normalized Example:

S_id	S_name

C_id	C_name

F_id	F_name	Salary

This is normalized table. Any values add ,delete & update we can create any operation successfully.

19. What do you understand by Data Independence? What are its two types?

Data Independence is defined as a property of DBMS that helps you to change the Database schema at one level of a database system without requiring to change the schema at the next higher level. Data independence helps you to keep data separated from all programs that make use of it. You can use this stored data for computing and presentation. In many systems, data independence is an essential function for components of the system..

There are two types of data independence:

1. Physical Data Independence

2. Logical Data Independence

20. What are Python namespaces?

Python Namespaces are collections of different objects that are associated with unique names whose lifespan depends on the scope of a variable. The scope is a region from where we can access a particular object.

Namespace is a way to implement scope. In Python, each package, module, class, function and method function owns a "namespace" in which variable names are resolved. When a function, module or package is evaluated (that is, starts execution), a namespace is created.

21. What are Dict and List comprehensions?

List comprehensions and dictionary comprehensions are a powerful substitute to for-loops and also lambda functions. Not only do list and dictionary comprehensions make code more concise and easier to read, they are also faster than traditional for-loops.

22. What is slicing in Python?

To access a range of items(Sub string),we will use '**Slicing'** .we can return range of characters using slicing.[:] is a slice operator.

Syntax:

slice(stop)

slice(*start*, *end, step*)

23. How is memory managed in Python?

1. Python memory is managed by Python private heap space.
2. All Python objects and data structures are located in a private heap.
3. The programmer does not have access to this private heap and interpreter takes care of this Python private heap.
4. The allocation of Python heap space for Python objects is done by the Python memory manager. The core API gives access to some tools for the programmer to code.
5. Python also has an inbuilt garbage collector, which recycle all the unused memory and frees the memory and makes it available to the heap space.

24. What is the difference between Python Arrays and lists?

List	Array
List is used to collect items that usually consist of elements of multiple data types.	An array is also a vital component that collects several items of the same data type.
List cannot manage arithmetic operations.	Array can manage arithmetic operations.
It consumes a larger memory.	It consumes less memory than a list.