CS6501 Internet Programming

Unit – IV

Part - A

1. What is PHP?

PHP - Hypertext Preprocessor -one of the most popular server-side scripting languages for creating dynamic Web pages.

- an open-source technology

- platform independent

2. List the data types used in PHP.

Data types Description

Integer Whole numbers (i.e., numbers without a decimal point)

Double Real numbers (i.e., numbers containing a decimal point)

String Text enclosed in either single (') or double ("") quotes.

Boolean True or false

Array Group of elements of the same type

Object Group of associated data and methods

Resource An external data source

3. How type conversion is done in PHP?

In PHP, data-type conversion can be performed by passing the data type as an argument to function settype. Function settype takes two arguments: The variable whose data type is to be changed and the variable ’s new data type.

E.g., settype($testString, "double");

4. Write the uses of text manipulation with regular expression in PHP.

PHP processes text data easily and efficiently, enabling straightforward searching, substitution, extraction and concatenation of strings.

Text manipulation in PHP is usually done with regular expressions — a series of characters that serve as pattern-matching templates (or search criteria) in strings, text files and databases.

This feature allows complex searching and string processing to be performed using relatively simple expressions

5. List the important characteristics of PHP.

The main characteristics of PHP are:

• PHP is web-specific and open source

• Scripts are embedded into static HTML files

• Fast execution of scripts

• Fast access to the database tier of applications

• Supported by most web servers and operating systems

• Supports many standard network protocols libraries available for IMAP, NNTP, SMTP, POP3

• Supports many database management systems libraries available for UNIX DBM, MySQL, Oracle,

• Dynamic Output any text, HTML XHTML and any other XML file.

• Also Dynamic Output images, PDF files and even Flash m ovies

• Text processing features, from the POSIX Extended or Perl regular expressions to parsing XML documents.

• A fully featured programming language suitable for complex systems development

6. How to Include PHP in a Web Page?

There are 4 ways of including PHP in a web page

1. <?php echo("Hello world"); ?>

2. <script language = "php"> echo("Hello world");

</script>

3. <? echo("Hello world"); ?>

4. <% echo("Hello world"); %>

we can also use print instead of echo

• Method (1) is clear and unambiguous

• Method (2) is useful in environments supporting mixed scripting languages in the same HTML file

• Methods (3) and (4) depend on the server configuration

7. Write a simple PHP Script.

Here is PHP script which is embedded in HTML using level one header with the PHP output text. The name of this file is called hello.php.

```
<html>
<head>
<title>Hello world</title>
</head>
<body>
<h1><?php echo("Hello world"); ?></h1>
<h1><?php print("This prints the same thing!");?></h1>
</body>
<html>
```

8. How do you include comments in PHP?

PHP supports three types of comments:

1. Shell style comments - denoted #THIS IS A COMMENT

2. C++ style comments - denoted THIS IS A COMMENT—

3. C style comments - denoted /* ALL THIS COMMENTED! */

9. What are variables in PHP?

Variables start with the $ symbol.

E.g.:

$myInteger = 3;

$myString = "Hello world";

$myFloat = 3.145;

10. How do you declare a variable using PHP data types?

Data types are not explicitly defined:

• Variable type is determined by assignment

• Strings can be defined with single (’) and double (") quotes.

• PHP has a Boolean type:

Defined as false

– An integer or float value of 0 or

– The keyword false

– The empty string ‘‘’’ or the string ‘‘0’’

– An empty array or object

– The NULL value

Defined as true

– Any non-zero integer or float value

– The keyword true

• Standard operators with standard syntax applied to variables

11. How do you declare and initialize an array in PHP?

Two ways of declaring and initializing an array:

a) Individual element initialization in an array

$myArray[0]= "Apples";

$myArray[1]= "Bananas";

b) Arrays can be constructed using the array() keyword

$person = array("Dave", "Adam", "Ralph");

12. What are associative arrays in PHP?

$myArray["Monday"]= "Apples";

$myArray["Tuesday"]= "Bananas";

Associative Arrays can also be constructed using the array( ) keyword.

$food = array("Monday"=>"Apples","Tuesday"=> "Bananas");

The symbol => delimits the hash name from the hash value.

13. What is the scope of variables in PHP?

Once PHP variables have been defined they are known for the rest of the Web page:

• Obeying standard scoping rules of course.

• Variables can be local to functions etc, much like any languages.

14. List some built in functions in PHP.

Mathematical functions:- abs, ceil, cos, log, min, rand, sqrt

File handling:- fopen, flock, feof, fgets, fputs, fclose

15. List the PHP standard Flow-controls statements

if,

if/else

switch

while

for

16. $a=3;

Function what()

{

++$a;

echo "a=$a\n";

}

what();

echo "a=$a\n";

What is the output?

1 3

17. List the functions to create a pattern.

Preg_match,

Preg_matchall,

Preg_replace,

Preg_split

18. Write a PHP script to set the background colour to blue on Tuesday in a given date.

```
<?php
if(date("D") == "Tue") $colour = "blue";
else $colour = "red";
?>
<html>
<head>
<title>Welcome</title>
</head>
<body bgcolor = <?php echo($colour) ?>>
<h1>Welcome</h1>
</body>
</html>
```

19. What is cookie? Give example in PHP

A cookie is a text string stored on the client machine by your script (to track users and manage transactions).

Cookies are automatically returned (by the client), and can be accessed using a variable of the same name

• The following script reads and displays a cookie, and sets it with a new value (string) that was passed to the script

as a parameter.

• The cookie will expire after 20 minutes (1200 seconds)

```
<?php setCookie("CookieTest", $val, time()+1200); ?>
<html>
<head><title>Welcome</title></head>
<body>
<?php echo("<h2>The cookie is: $CookieTest</h1>
</body>
</html>
```

20. What is XML ?

Extensible markup language. It offer a standard, flexible and inherently extensible data format, XML significantly reduces the burden of deploying the many technologies needed to ensure the success of Web services.

21. Define XML attributes

• XML elements can have attributes in the start tag, just like HTML.

• Attributes are used to provide additional information about elements.

• Attributes cannot contain multiple values (child elements can)

• Attributes are not easily expandable (for future changes)

22. Write the main difference between XML and HTML.

Main Difference between XML and HTML

XML was designed to carry data.

XML is not a replacement for HTML.

XML and HTML were designed with different goals:

XML was designed to describe data and to focus on what data is.

HTML was designed to display data and to focus on how data looks.

HTML is about displaying information, while XML is about describing information

23. What is meant by a XML namespace? (APR/MAY 2011)

XML Namespaces provide a method to avoid element name conflicts. When using prefixes in XML, a so-called

namespace for the prefix must be defined. The namespace is defined by the **xmlns attribute** in the start tag of an

element. The namespace declaration has the following syntax. **xmlns:*prefix*="*URI*".**

<root> <h:table xmlns:h="http://www.w3.org/TR/html4/">

<h:tr>

<h:td>Apples</h:td>

<h:td>Bananas</h:td>

</h:tr> </h:table>

<f:table xmlns:f="http://www.w3schools.com/furniture">

<f:name>African Coffee Table</f:name>

<f:width>80</f:width>

<f:length>120</f:length> </f:table> </root>

24. What is XML namespace? (NOV/DEC 2012)

XML allows document authors to create custom elements.

This extensibility can result in naming collisions (i.e. different elements that have the same name) among

elements in an XML document.

An XML namespace is a collection of element and attribute names. Each namespace has a unique name that
provides a means for document authors to unambiguously refer to elements with the same name (i.e. prevent
collisions).

25. What is the purpose of namespace? (MAY/JUNE 2014)

XML Namespaces provide a method to avoid element name conflicts. In XML, element names are defined by the
developer. This often results in a conflict when trying to mix XML documents from different XML applications.

26. Compare DOM and SAX in XML processing. (MAY/JUNE 2013)

DOM SAX

DOM is an interface-oriented
Application Programming Interface.

SAX parser works incrementally and generates
events that are passed to the application.

It allows for navigation of the entire
document.

DOM parser reads the whole XML document and
returns a DOM tree representation of xml
document.

DOM allows you to read and write. SAX is essentially an API for reading XML

27. What are complex types?

complex types are an important aspects of xml schema that allow application developers to define applicationspecific
data types that can be checked by programs that check XML document for validity. XML schema divides complex types into two categories: those with *simple content* & those with *complex content.*

28. What are all the Transformation techniques?

- XSLT - it is an XML- based languages used to transform XML documents into others format such as HTML for web display.
- XLINK - highlighting that element or taking the user directly to that point in the document.
- XPATH - xpath gets its name from its use of a payh notation to navigate through the hierarchical tree structure of an XML document

XQUERY - it is W3C initiative to define a standard set of constructs for querying & searching XML document.

29. What is XSLT?

XSLT stands for XSL Transformations

XSLT is the most important part of XSL

XSLT transforms an XML document into another XML document

XSLT uses XPath to navigate in XML documents

XSLT is a W3C Recommendation

30. Define the term DTD.

A Document Type Definition (DTD) defines the legal building blocks of an XML document. It defines the

document structure with a list of legal elements and attributes.

31. List two types of DTD declaration

DTD is stands for Document Type Definition which is used to structure the XML document. The type of DTD

are as follows i) Internal Declaration ii) External Declaration.

32. How to declare DTD attributes?

An attribute declaration has the following syntax:

<!ATTLIST element-name attribute-name attribute-type default-value>

DTD example:

<!ATTLIST payment type CDATA "check">

XML example:

<payment type="check" />

33. What is XML schema?

An XML schema is itself an XML document. It provides more detail about the kind of data that can appear as

part of an XML document.

34. What is the purpose of XML schema? (APR/MAY 2013)

The schemas are more specific and provide the support for data types.

The schema is aware of namespace

The XML Schema is written in XML itself and has a large number of built-in and derived types.

The xml schema is the W3C recommendation. Hence it is supported by various XML validator and XML

Processors.

35. What are the disadvantages of schema?

- The XML schema is complex to design and hard to learn
- The XML document cannot be if the corresponding schema file is absent.
- Maintaining the schema for large and complex operations sometimes slows down the processing of XML

document

36. Explain DTD for XML Schemas.

- XML documents are processed by applications
- Applications have assumptions about XML documents
- DTDs allow to formalize some of these constraints
- Part of the constraint checking must still be programmed

37. List some browsers that support XML and XSL

Mozilla Firefox

As of version 1.0.2, Firefox has support for XML and XSLT (and CSS).

Mozilla: *Mozilla includes Expat for XML parsing and has support to display XML + CSS. Mozilla also has some support for Namespaces. Mozilla is available with an XSLT implementation.*

Netscape: *As of version 8, Netscape uses the Mozilla engine, and therefore it has the same XML / XSLT support as Mozilla.*

Opera: *As of version 9, Opera has support for XML and XSLT (and CSS). Version 8 supports only XML + CSS.*

Internet Explorer: *As of version 6, Internet Explorer supports XML, Namespaces, CSS, XSLT, and XPath. Version 5 is NOT compatible with the official W3C XSL Recommendation.*

38. What is XML presentation technique?

XML presentation technologies provide a modular way to deliver and display content to a variety of devices. There

are different presentation technologies used in XML to display the content. Eg: CSS

39. List some of presentation technologies.

Presentation technologies provide a modular way to deliver and display content to a variety of devices.

i) CSS ii) XSL iii) XFORMS iv) XHTML

40. Write about DOM.

DOM is W3c supported standard application programming interface(API) that provides a platform and language- neutral interface to allow developers to programmatically access and modify the content and structure documents.

41. What is SAX?

SAX is an example of a grass- roots development effort to provide a simple; Java based API for processing XML.

42. What are the levels of DOM?

DOM provides a platform and language- neutral interface to allow developers to programmatically access and modify the content and structure documents. It has Level 0, Level 1, Level 2, Level 3

43. Compare CSS and XSL.

CSS can be used with HTML.But XSL can't be used in HTML

Both can be used in XML

i) CSS is not a transformation language but XSL.

Part – B

1. List and explain the XML syntax rules in detail. Explain how a XML document can be displayed on a browser. (APR/MAY 2011)

- All XML Elements Must Have a Closing Tag
- XML Tags are Case Sensitive
- XML Elements Must be Properly Nested
- XML Documents Must Have a Root Element
- XML Attribute Values Must be Quoted
- Entity References
- Well Formed XML

2. Explain the role of XML namespaces with examples. (MAY/JUNE 2012)

Differentiating Elements with namespaces:

xmlns attribute:

Specifying a Default Namespace:

3. Given an XSLT document and a source XML document explain the XSLT transformation process that produces a single result XML document. (NOV/DEC 2012)

Create java file

Create xsl file

Create xml file

View html file

4. Write short notes on Event-oriented parsing (MAY/JUNE 2014)

SAX:

Main.Java:

CountHelper.JAVA:

Staff1.xml:

Test data

5. Explain the following: i) XML namespace ii) XML style sheet. iii) XML attributes iv) XML Schema

XML Namespaces

Solving the Name Conflict Using a Prefix

XML Namespaces - The xmlns Attribute

Uniform Resource Identifier (URI)

Default Namespaces

Namespaces in Real Use

ii) XML Stylesheet

Displaying XML with XSLT

XSLT Example

Example XSLT Stylesheet***:***

iii) XML Attributes:

XML Attributes

XML Attributes Must be Quoted

XML Elements vs. Attributes

Avoid XML Attributes?

iv) XML Schema

An XML Schema:

Example

6. Explain XSL with suitable exemple

How Does It Work?

The XML File

The DTD File

The XML Style File

7. Explain the architectural revolution of XML.

XML: The Three Revolutions

The Data Revolution

The Data Revolution and The Architectural Revolution

The Architecture Revolution and The Software Revolution

8. Write a program using PHP that creates the web application for result publication

9. Design simple calculator using PHP.

10. Design application to send a email using PHP

10. Develop a shopping cart application using PHP with use of cookies.

Step 1: create a database and run the following SQL queries to create the sample tables.

Step 2: In your chosen root directory, create a folder named config.

Step 3: Inside that config folder, create a file named db_connect.php, and put the following code inside it, just change to database credentials to your own.

Step 4: Create a file called products.php, we will retrieve the products using the code below.

Step 5: products.php on step 4 above will not actually work without the layout_head.php and layout_foot.php, so first, we'll create the layout_head.php with the following code:

Step 6: layout_head.php includes another PHP file called navigation.php, so we'll create it and put the following code.

Step 7: Now we'll create the layout_foot.php

Step 8: products.php has links to the add_to_cart.php file, we'll create that file and put the code below.

Step 9: Now if the products were able to be added on the cart, we'll have to view it using cart.php, we'll create that file with the following codes.

Step 10: cart.php links to a file called remove_from_cart.php, to remove an item from the cart.

11. Explain about the control statements in PHP with example.

PHP Conditional Statements

The if Statement

The if...else Statement

The if...elseif....else Statement

PHP - The switch Statement

12. Explain about cookies in PHP with example.

Cookie:

Create Cookies With PHP

PHP Create/Retrieve a Cookie

Modify a Cookie Value

Delete a Cookie

Check if Cookies are Enabled

13. Describe the data base connections in PHP with suitable example.

Connection to MySQL database using PHP

14. Explain the steps in the PHP code for querying a database with suitable examples.

- Create a database connection
- Select database you wish to use
- Perform a SQL query
- Do some processing on query results
- Close database connection