

## UNIT 1: JAVA PROGRAMMING

### PART – A

#### 1. What is meant by Object Oriented Programming?

- OOP is a method of programming in which programs are organized as cooperative collections of objects. Each object is an instance of a class and each class belong to a hierarchy.
- Basic Concepts of OOP 1) Class 2) Object 3) Method 4) Inheritance 5) Data Abstraction 6) Data Encapsulation 7) Polymorphism 8) Message Passing

#### Explain OOP Principles.

##### 1. Explain working of Java Virtual Machine (JVM)?

JVM is an abstract computing machine like any other real computing machine which first converts .java file into .class file by using Compiler (.class is nothing but byte code file.) and Interpreter reads byte codes.

##### 2. What is a Class?

Class is a template for a set of objects that share a common structure and a common behaviour.

##### 3. What are methods and how are they defined?

Methods are functions that operate on instances of classes in which they are defined. Objects can communicate with each other using methods and can call methods in other classes. Method definition has four parts.

They are name of the method,

1. type of object or primitive type the method returns,
2. a list of parameters and
3. the body of the method.
4. A method's signature is a combination of the first three parts mentioned above.

##### 4. What are different types of access modifiers (Access specifiers)?

Access specifiers are keywords that determine the type of access to the member of a class. These keywords are for allowing privileges to parts of a program such as functions and variables. These are:

*public*: Any thing declared as public can be accessed from anywhere.

*private*: Any thing declared as private can't be seen outside of its class.

*protected*: Any thing declared as protected can be accessed by classes in the same package and subclasses in the other packages.

*default modifier* : Can be accessed only to classes in the same package.

**5. Explain the usage of Java packages.**

This is a way to organize files when a project consists of multiple modules. It also helps resolve naming conflicts when different packages have classes with the same names. Packages access level also allows you to protect data from being used by the non-authorized class

**6. What is Garbage Collection and how to call it explicitly?**

When an object is no longer referred to by any variable, java automatically reclaims memory used by that object. This is known as garbage collection. System. gc() method may be used to call it explicitly

**7. What is static variable and static method?**

static variable is a class variable which value remains constant for the entire class. static method is the one which can be called with the class itself and can hold only the static variables

**8. What is finalize() method?**

finalize () method is used just before an object is destroyed and can be called just prior to garbage collection.

**9. What is meant by Inheritance?**

Inheritance is a relationship among classes, wherein one class shares the structure or behavior defined in another class. This is called Single Inheritance. If a class shares the structure or behavior from multiple classes, then it is called Multiple Inheritance. Inheritance defines “is-a” hierarchy among classes in which one subclass inherits from one or more generalized super classes.

**10. What is meant by Inheritance and what are its advantages?**

Inheritance is the process of inheriting all the features from a class. The advantages of inheritance are reusability of code and accessibility of variables and methods of the super class by subclasses.

**11. What is the difference between super class and subclass?**

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super class is a class that is inherited whereas sub class is a class that does the inheriting.

**12. What is meant by Binding?**

Binding denotes association of a name with a class

**13. What is meant by Polymorphism?**

Polymorphism literally means taking more than one form. Polymorphism is a characteristic of being able to assign a different behavior or value in a subclass, to something that was declared in a parent class.

#### 14. What is Dynamic Binding?

Binding refers to the linking of a procedure call to the code to be executed in response to the call. Dynamic binding (also known as late binding) means that the code associated with a given procedure call is not known until the time of the call at run-time. It is associated with polymorphism and inheritance.

#### 15. What is final modifier?

The final modifier keyword makes that the programmer cannot change the value anymore. The actual meaning depends on whether it is applied to a class, a variable, or a method.

*final* Classes- A final class cannot have subclasses.

*final* Variables- A final variable cannot be changed once it is initialized.

*final* Methods- A final method cannot be overridden by subclasses.

#### 16. What is an Abstract Class?

Abstract class is a class that has no instances. An abstract class is written with the expectation that its concrete subclasses will add to its structure and behaviour, typically by implementing its abstract operations.

#### 17. What are inner class and anonymous class?

Inner class: classes defined in other classes, including those defined in methods are called inner classes. An inner class can have any accessibility including private.

#### 18. Define super class and subclass?

Superclass is a class from which another class inherits. Subclass is a class that inherits from one or more classes.

#### 19. What is the difference between abstract class and interface?

- a) All the methods declared inside an interface are abstract whereas abstract class must have at least one abstract method and others may be concrete or abstract.
- b) In abstract class, key word abstract must be used for the methods whereas interface we need not use that keyword for the methods.
- c) Abstract class must have subclasses whereas interface can't have subclasses.

#### 20. What is interface and its use?

Interface is similar to a class which may contain method's signature only but not bodies and it is a formal set of method and constant declarations that must be defined by the class that implements it. Interfaces are useful for:

- Declaring methods that one or more classes are expected to implement
- Capturing similarities between unrelated classes without forcing a class relationship.
- Determining an object's programming interface without revealing the actual body of the class.

#### **24. What are the different states of a thread ?**

The different thread states are ready, running, waiting and dead.

#### **25. What is multithreading and what are the methods for inter-thread communication and what is the class in which these methods are defined?**

Multithreading is the mechanism in which more than one thread run independent of each other within the process. wait (), notify () and notifyAll() methods can be used for inter-thread communication and these methods are in Object class. wait() : When a thread executes a call to wait() method, it surrenders the object lock and enters into a waiting state. notify() or notifyAll() : To remove a thread from the waiting state, some other thread must make a call to notify() or notifyAll() method on the same object.

#### **26. How can we create a thread?**

A thread can be created by extending Thread class or by implementing Runnable interface. Then we need to override the method public void run().

### **PART B**

#### **1. Describe Java in details ?**

- Review of OOPS
- History of Java
- Java Program Structure
- Example – Java

## **2. Explain Data types ,Operators & Variable in Java ?**

- Data types – with Syntax & example
- Operators types with Description
- Arithmetic Operators
- Relational and Conditional Operators
- Shift and Logical Operators
- Assignment Operators
- Other Operators
- Variable – Syntax with examples

## **3. Define Java Class , Methods & Access Specifier .**

- Class contents:
- Method Access Specifiers
- Methods Modifiers, Method return type, Method Parameters
- Methods Over Loading
- Class Declaration
- Declaring Member Variables
- Access Specifier
- Sample Program with Explanation

## **4. Explain Array & String in detail? with example.**

- Array
- Declaration of Array
- Creation of Arrays
- Initialisation of Arrays
- Arrays – Example
- Two Dimensional Arrays
- Demonstrate a two-dimensional array
- Variable Size Arrays
- String
- Introduction
- String Operations in Java:
- String Class:
- String operations and Arrays:
- String class – Constructors:
- String class – Example

**5. Explain Package in with example?**

- Declaring Package
- Accessing other Package
- Package Naming Conversion
- Sample Package program with explanation

**7. Explain Inheritance In Java?**

- *Inheritance rules*
- Declaring Inheritance
- Payroll with Inheritance

**8. Describe Abstract classes & Object classes**

- a. Concepts
- b. General Form(Syntax)
- c. Example Program
- d. Program Explanation.

**UNIT II – WEBSITES BASICS, HTML 5, CSS 3, WEB 2.0****PART A****1. Define Internet.**

- Internet is the collection of computers that can communicate with one another using Transmission Control Protocol / Internet Protocol (TCP/IP) over network.

**2. Define communication Protocol.**

A **communication protocol** is a detailed specification or set of rules of how communication between two computers will be carried out in order to serve the following purposes.

1. The type of error checking to be used
2. Data Compression method, if any
3. How the sending device will indicate that it has finished sending a message
4. How the receiving device will indicate that it has received a message

### 3. What is the difference between node and host?

A node is any device connected to a network whereas the host is a networked general-purpose computer rather than a single purpose device (such as a printer).

### 4. Define a Port?

A port is a logical channel to an application running on a host. ie. The applications running on the host machines are uniquely identified by port numbers.

### 5. Define URI, URL, URN? [APR-2011, NOV-2012]

1. URI (Uniform Resource Identifier): It identifies the particular resource on world wide web(WWW).
2. URL (Uniform Resource Locator): It represents the location of a resource on the web.
3. URN (Uniform Resource Name): It is used to identify unique name rather than specifying a location. (Eg. ISBN:0-1404-4417-3).

### 6. Define Relative URL[MAY-2014]

Relative URL contains the only the folder name and filename or even just the file name.  
For example: www.example.com

### 7. Define Absolute URL

Absolute URL contains all the information necessary to identify files on the internet.  
For example: http://www.example.com/secure/localfile.txt

### 8. List the different basic protocols used in Internet [MAY-2013][NOV-2012][May-2012]

TCP/IP - Transmission Control Protocol / Internet Protocol  
POP3 – Post Office Protocol version 3  
MIME – Multimedia Internet Message Extension  
IMAP – Internet Message Access Protocol

### 9. What are the two major protocols for accessing email from servers? (MAY-2012)

HTTP - Hypertext Transfer Protocol and  
SMTP - Simple Mail Transfer Protocol

**10. Explain the way in which a DNS server resolves addresses.[NOV-2013][NOV2012]**

DNS stands for **Domain Name Server** which is used to translate host name (www.example.com) to the numerical IP address (192.0.34.166) of the computer and vice versa.

**There are two ways**

1. Host Name to IP address
2. IP address to Host Name

**11. What are the sequences of steps for each HTTP request from a client to the server?**

1. Making the connection
2. Making a request
3. The response
4. Closing the connection

**12. What is a GET request?**

A get request gets information from a server. Common use of get requests is to retrieve an HTML document or an image.

**13. What is a POST request?**

A post request typically posts or sends data to a server. Common use of post requests is to send information to server such as authentication information.

**14. List any four common browsers. [NOV-2011]**

Microsoft Internet explorer, Netscape, Google Chrome, Mozilla Firefox

**15. Define Web Clients.**

A Web Client is software that accesses a web server by sending an HTTP request message and processing the resulting HTTP response.

**16. Write the functions of Web Servers?[MAY-2014]**

A Web Server is software that accepts HTTP requests from web clients and returns an appropriate resource in the HTTP response.

**17. Name some web servers?**

- Microsoft Internet Information Services (IIS),
- Apache.

**18. Explain in brief the interaction between a web server and a Servlet. (APRIL-2011)**

- Makes a request by specifying a URL + additional info



- Basically a method call, the method and arguments. Receives the request.
- Identifies the request as a servlet request Passes the request to the servlet container
- Locates the servlet (Java code, loaded and running in the container JVM) Feeds the request parameters to the servlet
- Executes in a separate thread
- The servlet can store/retrieve objects (possibly session scoped) from the servlet container. Output is sent back to the requesting web browser.
- Servlet continues to be available in the servlet container.

### 19. What is the use of MIME? (Multipurpose Internet Mail Extension)

- MIME is an open standard for sending multipart, multimedia data through Internet email.
- MIME was originally intended for email, it has become a widely used technique to describe a file's contents so that client software can tell the difference between different kinds of data...

### 20. Name the three flavors HTML?[NOV2013]

- **Strict**
  - Use markup, with no display information (no font, color, or size information)
  - Use with CSS (Cascading Style Sheets) if you want to define how the document should look
  - `<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">`
- **Transitional**
  - Use with standard HTML and/or with CSS
  - Allows deprecated HTML elements
  - `<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">`
- **Frameset**
  - Use if your document uses HTML frames
  - `<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Frameset//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-frameset.dtd">`

### 21. What is HTML?

- HTML stands for **Hyper Text Markup Language**.
- HTML is not a programming language, it is a **markup language**.
- A markup language is a set of **markup tags**.
- HTML uses **markup tags** to describe web pages.

### 22. How will you create a password field in a HTML form? (NOV-2011)

The password field for a form is created by  
`<input type="password" />` defines a password field:

**Example:**

```
<form>
Password: <input type="password" name="pwd" />
</form>
```

### 23. How to create frames?[May-2014]

- Frames used to display more than one HTML document in the same browser window.
- Each HTML document is called a frame, and each frame is independent of the others.

#### The Frameset Tag

- The <frameset> tag defines how to divide the window into frames
- Each frameset defines a set of rows or columns
- The values of the rows/columns indicate the amount of screen area each row/column will occupy

#### The Frame Tag

- The <frame> tag defines what HTML document to put into each frame.

- Example

```
<frameset cols="25%,75%">
<frame src="frame_a.htm">
<frame src="frame_b.htm">
</frameset>
```

### 24. What are the types of list supported by HTML?

There are three types of list supported by HTML.

Unordered – A bullet list

Ordered – a number list

Definition – A list of terms and definitions for each

#### Example: Unordered list

```
<ul>
    <li> Bulleted list item </li>
    <li> Bulleted list item </li>
</ul>
```

#### Example: Ordered list

```
<ol>
    <li> Numbered list item </li>
    <li>Numbered list item </li>
</ol>
```

#### Example: Definition list

```
<dl>
    <dt> Term </dt>
    <dd> Bulleted list item </dd>
    <dt> Term2 </dt>
    <dd> Definition of term 2 </dd>
</dl>
```

### 25. List out some important HTML elements.[MAY-2012]

```
<HTML> </HTML>
<BODY> </BODY>
<FORM> </FORM>
<TABLE> </TABLE>
<P>, <B>, <I>, <U> <SPAN>, <STRONG>, <TT>, <LI>, <OL>, <UL> <INPUT> <SELECT>
```

## 26. Explain the attributes of table tag with an example (MAY-2013)

A table is a two dimensional matrix, consisting of rows and columns. All table related tags are included between <TABLE> </TABLE> tags.

```
<TABLE>
<TH> Heading </TH>
<TR> Row elements </TR>
<TD> Table data values </TD>
</TABLE>
```

### ATTRIBUTES OF TABLE TAG

**ALIGN** Horizontal alignment is controlled by the ALIGN attribute. It can be set to LEFT, CENTER, or RIGHT

**VALIGN** Controls the vertical alignment of cell contents. It accepts the values TOP, MIDDLE or BOTTOM WIDTH

**BORDER** Controls the border to be placed around the table.

**CELLPADDING** This attribute controls the distance between the data in a cell and the boundaries of the cell

**CELLSPACING** Controls the spacing between adjacent cells

**COLSPAN** Used to split the single cell to one or more columns

**ROWSPAN** Used to split the single cell to one or more rows.

## 27. Write HTML code to display an image. (NOV-2012)

### Inserting Image

Place all images in the same directory/folder where you web pages are <img src> is a single tag 

### Image Size

Computer images are made up of "pixels" <IMG HEIGHT="100" WIDTH="150" SRC="image.gif">

## 28. Write HTML code to create the following Table.[MAY-2012]

w	x
y	z

```
<html>
<body>
<table>
<tr><td>w</td></tr>
<tr><td>x</td></tr>
<tr><td>y</td></tr>
<tr><td>z</td></tr>
</table>
```

```
</body>
</html>
```

**29. Give some advantages of using cascading style sheets (CSS ) [APR-2013][APR-2011]**

A Cascading Style Sheet (CSS) describes the appearance of an HTML page in a separate document CSS has the following advantages:

1. It separates content from presentation
2. It defines the appearance and layout of all the pages in your web site in a single place
3. It can be used for both HTML and XML pages

**30. What are external style sheets? (MAY/JUNE 2013)**

The style sheets which has been stored in separate files and included in an HTML documents through the use of a link element are known as external style sheets.

**31. List the two forms of style rules with an example [NOV-2012][NOV-2011] OR  
Core syntax of CSS [MAY-2012]**

- CSS syntax is very simple.
- It is just a file containing a list of selectors (to choose tags) and descriptors (to tell what to do with them)
- Example: h1 {color: green; font-family: Verdana} says that everything included in h1 (HTML heading level 1) tags should be in the Verdana font and colored green

**32. How will you include CSS in a web site?[MAY-2014]**

**1. External style sheet**

- This is the most powerful
- Applies to both HTML and XML
- All of CSS can be used
- Style information is read from a separate file that is specified in the <LINK> tag
- Example: <liNK rel=stylesheet type="text/css" href=mystyle.css title="styletitle">

**2. Embedded Styles**

- Applies to HTML, *not* to XML
- All of CSS can be used
- Style information is defined in the document head using the <STYLE> and </STYLE> tags.

**3. Inline Styles**

- Applies to HTML, not to XML
- Limited form of CSS syntax
- Style information is placed inside an HTML tag and applies to all content between that tag

**PART B**

**1. Explain in detail of the internet protocols. [APR-2011] [NOV-2011][NOV-2012][MAY-2012]**

Ans: IP  
TCP  
UDP  
HTTP  
FTP

**2. Explain the capabilities of web client and web server. (MAY-2013)[MAY-2012]**

- Web clients:** Basic browser functions
- URL
  - User Controllable features
  - Additional functionality
- Web Servers:** \* Server Features
- Server History
  - Server Configuration and Tuning
  - Defining Virtual Hosts
  - Logging
  - Access Control

**3. Create an html document for a company home page and explain.[APR-2011] (MAY 2013)**

Ans: USE forms, frames, table tags

**4. List and explain any four html elements in detail. State the types of list supported by html. .[APR-2011] . [NOV-2011]**

TYPES OF LISTS

- Unordered lists
- Ordered lists
- HTML form provides several mechanisms to collect information from people viewing your site. The syntax of the form is
- Form tags
- Input tag
- Radio button,checkbox, text field,textarea, submit,reset and push button.

**5. Discuss the text properties of CSS with Suitable Example.**

- o CSS Font Families
- o Font Family
- o Font Style
- o Font Size
- o Set Font Size With Pixels
  - o Set Font Size With Em
  - o All CSS Font Properties
  - o Text Formatting and color
  - o All CSS Text Properties

## UNIT III – CLIENT SIDE AND SERVER SIDE PROGRAMMING

### PART A

#### 1. Differentiate between Client-side and Server-side Scripting [MAY-2014]

##### Client-side Scripting

- To run scripts in browser.
- The source code is transferred from the web server to the users computer over the internet and run directly in the browser.

##### Server-side Scripting

- Runs a scripting language is a web server.
- It is usually used to provide interactive web sites that interface to databases or other data stores on the server.

#### 2. Explain array creation in Java script with example. (APRIL-2011)

Array can be defined in three ways

i. Using the array constructor directly in a call with no argument.

```
E.G: VAR ARY1=NEW ARRAY();
```

```
ARY1[0]=4;
```

```
ARY1[1]=TRUE;
```

ii. By supplying two or more arguments to the array Constructor

```
VAR ARY2=NEW ARRAY(4,TRUE);
```

iii. The Array built-in object can be used to construct object with special properties and that inherit various methods 

```
VAR ARY2=[4,TRUE];
```

#### 3. List out some of the built-in objects of JavaScript? [MAY-2012]

Built-in objects of JavaScript are

**4. What is the important feature of dynamic positioning? (APRIL-2008)**

Dynamic positioning allows you to tell the browser exactly where to put a block of content without using tables.

**5. List out some common window object methods.[MAY-2013]**

alert(String), confirm(String), prompt(String, String), open(String, String) close(), focus(),

**6. What is meant by DHTML? [NOV-2013]**

The combination of HTML plus JavaScript and the DOM is referred to as Dynamic HTML (DHTML), and an HTML document that contains scripting is called a dynamic document.

**7. What are the functions of doGet() and doPost() methods?**

1. doGet()-Browser will append the query string it constructs to the form's action URL and performs an HTTP GET using the resulting URL.
2. DOPOST() – Same query string will be constructed , but it will be passed to the server via the body of the HTTP request rather than as part of the URL.

**8. What is the purpose of cookies?[MAY-2013][NOV-2012]**

Cookies are small bits of textual information that a Web server sends to a browser and that the browser returns unchanged when visiting the same Web site or domain later.

Purpose:

- Identifying a user during an e-commerce session
- Avoiding username and password.
- Customizing a site
- Focusing advertising.

**9. Write the code to return the full URL of a document. (NOV-2011)**

```
<title>Javascript get url</title>  
document.write(document.location.href)
```

**10. How is session tracking achieved by URL rewriting? (NOV-2011)[MAY-2014]**

In URL rewriting the server passes a session ID by adding it to every servlet URL appearing in any page sent to the client. It involves rewriting every URL referencing the servlet in the href attribute of any anchor and the action attribute of any form output by the servlet

**11. Explain the life cycle methods of a Servlet. (MAY/JUNE 2013)[MAY-2012]**

The methods of servlet life cycle are INIT(), SERVICE() AND DESTROY()

- public void init()-Initialization
- public void service()-Servicing the Request
- public void destroy()-Destroying the Servlet

**12. State the use of ServletContext object.[NOV-2013]**

ServletContext is a interface which helps us to communicate with the servlet container. There is only one ServletContext for the entire web application and the components of the web application can share it.

**13. What is JSP and its advantages? (MAY-2013)[MAY-2012]**

- JSP- Java Server Pages, an extension of servlet technology simplifies the delivery of dynamic web content.
- They enable web application programmers to create dynamic content by reusing predefined components and by interacting with components using server side scripting.

**14. Explain in brief about JavaScriptlet. (APRIL-2011)**

JSP Scriptlets or scripting elements, enable programmers to insert Java code that interacts with components in a JSP and possible other Web application components to perform request processing.

**15. Explain the life-cycle methods in JSP?**

The jsplnit()- The container calls the jsplnit() to initialize te servlet instance. It is called before any other method, and is called only once for a servlet instance.

The \_jspservice()- The container calls the \_jspservice() for each request, passing it the request and the response objects.

The jspDestroy()- The container calls this when it decides take the instance out of service. It is the last method called n the servlet instance.

**16. List out JSTL functional areas.**

The JSTL is divided into several separate functional areas, each with its own namespace. List of all the JSTL functional areas along with the suffices of the respective namespace names are as follows

Functional Area	Namespace Name Suffix
Core	CORE
XML Processing	Xml
Functions	FUNCTIONS



Database	Sql
Internationalization	FMT

**17. Write two basic difference between JSP and SERVLETS. [MAY-2013]**

<b>JSP</b>	<b>Servlets</b>
JSP is a webpage scripting language that can generate dynamic content.	Servlets are Java programs that are already compiled which also creates dynamic web content.
JSP run slower compared to Servlet as it takes compilation time to convert into Java Servlets.	Servlets run faster compared to JSP.
It's easier to code in JSP than in Java Servlets.	Its little much code to write here.
In MVC, jsp act as a view.	In MVC, servlet act as a controller.
JSP are generally preferred when there is not much processing of data required.	servlets are best for use when there is more processing and manipulation involved.
The advantage of JSP programming over servlets is that we can build custom tags which can directly call Java beans.	There is no such custom tag facility in servlets.
We can achieve functionality of JSP at client side by running JavaScript at client side.	There are no such methods for servlets.

## PART B

### 1. Explain the elements of JavaScript with relevant examples. .[APR-2011] [MAY-2013]

- o Basic syntax
- o Javascript variables and datatypes
- o Javascript statements
- o Javascript operators
- o Javascript literal values
- o Javascript functions

### 2. Write a java script program to perform the validation process in an application programs[May-2014]

Use function and object to validate the process.

### 3. What are the various java script objects? Explain each with an example.[May-2014]

- Math Object
- String Object
- Date Object
- Boolean and Number Object
- Document Object
- Window Object

### 4. State and explain the types of statements in java script. Explain how functions can be written in Java script with an example. .[APR-2011]

- Statements:
  - Expression Statement
  - Block statement
  - Keyword statement.
- Functions:
  - 1)Function Declaration.
  - 2) Function calling.
  - 3) Function definition.

### 5. State the types of JavaScript statements with examples. [NOV2013][NOV 2011]

- o A JavaScript statement is a command to a browser.
- o The purpose of the command is to tell the browser what to do.

#### **TYPES**

1. **Expression statement:** a statement that consists entirely of an expression. Typical expression statements: assignment and increment statements.

**Example:** `i= 5; j++;`

1. **Block statement:** one or more statements enclosed in { } braces.
2. **Keyword statement:** statement beginning with a keyword, *e.g.*, `var` or `if`

**6. Explain the basic servlet architecture with the diagram. [APR-2011] (MAY-2013)**

- `javax.servlet.Servlet` interface
- `initialize` a Servlet,
- `getServletConfig`
- `service(ServletRequest req, ServletResponse res)`

**7. What is session? Explain how client state is maintained using session and also explain about session tracking and session management using an example.**

- 1) Session creation
- 2) Storing and retrieving attributes
- 3) Session termination
- 4) Session tracking

**8. What is cookies? Write servlet to illustrate the principles of cookies and explain.[MAY-2013][MAY-2014]**

- 1) Cookie creation
- 2) Cookie methods
- 3) Cookie example program.

**9. Explain the Basic of JSP .[APR-2011] [MAY-2013]**

- JSP EL-Overview of the JSP Markup Language (JML) Tag Library
- JML Tag Library
- JML Tag Categories-JSP Markup Language (JML) Tag Descriptions
- Bean Binding Tag Descriptions
- JML use Variable Tag
- JML use Cookie Tag
- JSTL Core Tags:
- General Tags

## UNIT IV – PHP AND XML

### PART-A

#### 1. What is PHP?

**PHP** (recursive acronym for **PHP: Hypertext Preprocessor**) is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML.

#### 2. Why PHP is also called as Scripting language?

PHP is basically a general purpose language, which is used to write scripts. Scripts are normal computer files that consist of instructions written in PHP language. It tells the computer to execute the file and print the output on the screen. PHP is used for webpages and to create websites, thus included as scripting language.

#### 3. What is the difference between PHP and JavaScript?

The difference lies with the execution of the languages. PHP is server side scripting language, which means that it can't interact directly with the user. Whereas, JavaScript is client side scripting language, that is used to interact directly with the user..

#### 4. What is the difference between \$message and \$\$message?

The main difference between \$message and \$\$message is that former one is a simple variable and later is a reference variable. \$message is a variable with a fixed name and it consists of a fixed value. \$\$messages contains the variable itself.

#### 5. How the web server interprets PHP and interacts with the client?

After installing and configuring the PHP, the web When PHP is installed, the Web server looks for PHP code that is embedded in HTML file with its extension. The extensions which are used are .php or .phtml. When web server receives a request for the file with an appropriate extension, HTML statements are processed and PHP statements are executed on the server itself. When the processing gets over the output is being shown in HTML statements.

#### 6. What is well-formed document?

An HTML or XML document is said to be well formed when it contains elements with proper tagging and no syntactic errors.

#### 7. What is DTD?

- A Document Type Declaration enables an XML parser to verify whether an XML document is valid,
- i.e. its elements contain the proper attributes in the proper sequence.

**8. What is meant by XML Namespace?[NOV-2013][NOV-2012][APR-2011][MAY-2014]**

- 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 refer elements with the same name in order to prevent collisions.

**9. What is the use of XML declaration?**

- XML declaration is a special tag used to specify the version of XML used to write the document and optionally some additional meta-information about the document such as the character set/encoding used.
- For e.g the syntax of XML declaration is `<? XML VERSION=1.0 ?>`

**10. What is RSS?**

- RSS stands for RDF (Resource Description Framework) Site Summary and is also known as Rich Site Summary and Really Simple Syndication.
- RSS is popular and simple XML format designed to share headlines and web content between Web sites.

**11. What are the types of XML Parsers?**

- Validating Parsers
- Non-Validating Parsers

**12. What are XML parsers?**

XML Parsers are used to check whether the document is well formed and valid.

**13. What are the components of XSL?[NOV-2012][MAY-2014][MAY-2102]**

- XSLT-XSL Transformations which defines the semantics of the various elements and attributes of the XSL namespace.
- XPATH – XML Path Language which defines the syntax and semantics of many of the attribute values used in XSL elements for accessing positions of the input XML
- XSL-FO – XSL Formatting Objects is a separate vocabulary for defining style properties of an XML document.

**14. What is the purpose of XSLT? (NOV-2011)**

The XSLT stands for XSL Transformations and XSL stands for eXtensible Stylesheet Language. The XSLT is used for defining the XML document transformation and presentations.

**15. Explain the term XML schema. [NOV-2013][MAY-2013]**

XML Schemas are part of the XML vocabulary and its addresses the standard for XML document validation by including a definition of a collection of standard data types which are used

to describe data structures.

### **16. What are built-in data types for XML Schema? (MAY-2013)**

The data types defined by the XML Schema specification itself are called its built-in data types. For e.g xsd:integer, xsd:decimal, xsd:string, xsd:boolean, xsd:float etc.

### **17. What are the classifications XML Schema data types?**

There are two classes of XML Schema data types. They are (i) Simple (ii) Complex

A simple type is a data type whose values are represented in XML documents by character data and are used to represent individual values.

A complex type is a data type whose values are represented using markup and are used to represent structured data.

### **18. What is XSL and why it is used. (APRIL-2008)**

The Extensible Stylesheet Language (XSL) is an XML vocabulary typically used to transform XML document from one form to another form. XSL document are well-formed XML documents.

## **PART –B**

### **1. What are the steps involved to run PHP?**

The steps which are involved and required to run PHP is as follows:

1. Set up the web environment.
2. Set up the web servers. There are many web servers that are available and the mostly used is Apaches which automatically remains installed with linux distribution and on windows it is easy to install. There are other servers like IIS (Internet information server) provided by Microsoft can be used to set up the web environment.
3. Install the web server and PHP
4. Update and administer the system for changes.

### **2. What are the different types of statements that are present in PHP?**

There are four kinds of PHP statements that are present. They are as follows:

- Simple statement- these are the echo statements and end with a semicolon (;). PHP ignores white spaces between simple statements. Until it finds a semicolon it reads the statement.
- Complex/Conditional statements: these are the statements which deal with certain conditions that have to be executed to meet certain specific requirements. These are if and else block or switch statements. PHP reads the complete statement and doesn't stop at the first semicolon it encounters. It looks for starting and ending braces to end the execution.
- Looping statements: statements that are repeated in a block. The feature that enables you to execute the statements repeatedly is called as loop. For example: for loop, while loop, do..while loop.

### **3. Write a Hello world program using variable?**

To write the hello world program in PHP using variable you need to know the tags that are used in HTML and the PHP coding which is as follows:

```
<html>
<head><title>Hello World Script using Variable</title></head>
<body>
<?php
$salutation = "Hello World!";
echo "<p>$salutation</p>";
?>
</body>
</html>
```

#### 4. How many different types of messages available in PHP?

1. Error message: is received when the script has some problem that is preventing it from running correctly. The message consists of the possible solution or identification of the problem. Ex: Parse error: occurs when there is something gets missed while writing the script.
2. Warning message: is received when the script find out some problem that doesn't allow the script to run. These messages are not of very high priority but quite essential to show that there is something wrong with the script. Ex: if you write print\_r() instead of print\_r(\$varname) then a warning will occur like this:  
Warning: print\_r() expects at least 1 parameter, 0 given  
The script will execute in continuation.
3. Notice: is received when there is a condition where a script might have an error or may be it is working. Ex: echo variables that don't exist.

#### 5. How to transform XML documents to other forms.

JAXP -The SAX API -The DOM API -XML Namespaces -Transforming a DOM Tree to an XML Document -Transforming an XML Document to an HTML -Document -XSL Programming-XSL COMPONENT VIEW-XSLT Input Document View

#### 6. How to represent data types in XML Schema .[APR-2011] [NOV- 2012]

- o Built-in datatypes
- o XML schema
- o User defined simple types
  - User defined complex types

### UNIT V - WEB SERVICES

#### PART A

##### 1. What are Web Services? [NOV-2011][MAY-2014]

Web Services are software systems that are designed to be accessed using web protocols and technologies that are intended to be used by other software applications rather than directly by end users.

**2. What is the concept behind JAX-RPC technology? [NOV2011]**

- JAX-RPC-Java API for XML-Remote Procedure Call
- It is a Java based web service

**3. What is meant by WSDL? (APRIL-2011)[NOV-2012]**

- WSDL is Web Services Definition Language which is based on XML.
- WSDL defines the web service like operation, parameter, return values and communication protocols.

**4. What is the use of WSDL?[NOV-2013][NOV-2012][MAY-2012]**

Web Services Definition Language (WSDL) is used to describe the operations provided by a web service which includes defining the data to be passed from the client to the operation as well as the return value of the operation using SOAP.

**5. Define the term RPC.**

Remote Procedure Call is the generic term used for the type of communication used to describe web service operations when the client makes a call to a method or procedure that resides on another machine (remotely)

**6. What are Environment Variables?**

Environment Variables are variables used to tell applications where to look for certain files. For example, the CLASSPATH environment variable can be used to tell the Java Compiler and virtual machine where to look for user-defined Java class files.

**7. Define Serialization. (APRIL/MAY 2011)**

- Serialization is the process of writing the state of the object to the byte stream.
- This technique is useful when we want to store the current state of the object to the file.

**8. What is the use of Connection object?**

A Connection object can be used to obtain information about the database, such as the table it contains, as well as to set parameters of the interaction with the database.

**9. List out the objects used for database access using JDBC.**

- Connection
- Statement
- ResultSet



## 10. List out the default ports of Tomcat Web Server and Java Web Server

Tomcat – 8080

JWS – 9090

HTTP – 80

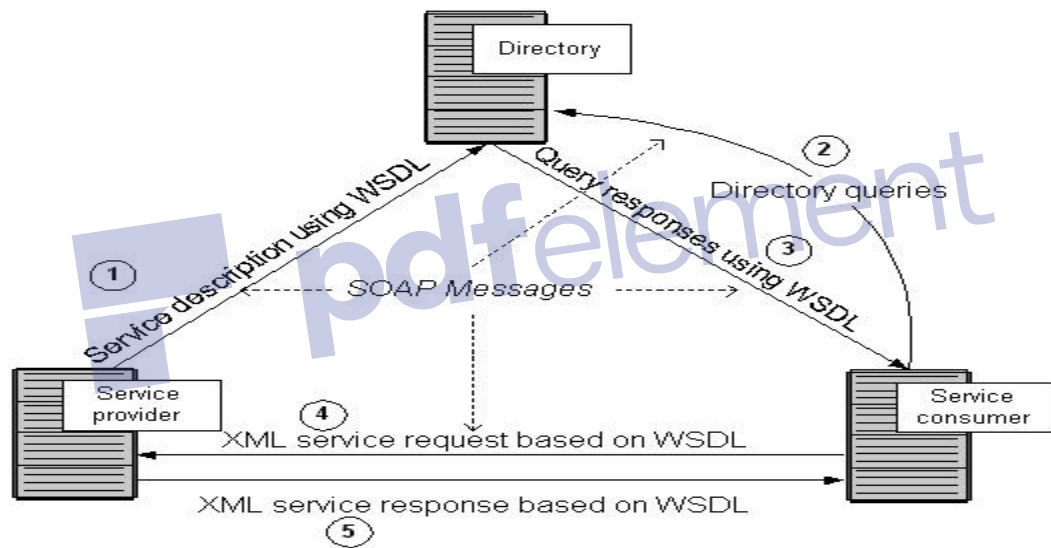
SMTP – 25

Telnet – 23 POP3 – 110

## 11. What is UDDI? (NOV-2011)

- UDDI stands for Universal Description, Discovery and Integration. It is a directory for storing information about web services.
- It is a directory of web service interfaces described by WSDL.
- It communicates via SOAP. It is built into the Microsoft .NET platform

Draw the architecture of UDDI.



## 12. Define the need for SOAP? (Simple Object Access Protocol) (MAY-2013)[NOV-2012]

- SOAP is an XML based protocol that allows applications to easily over the internet using XML documents called SOAP message.
- A SOAP message contains an envelope, which is a structure that describes a method call.
- A SOAP message's body contains either a request or a response.

## 13. What do you mean by JDBC?

- JDBC Java Data Base Connectivity.
- It is a part of the Java Development Kit which defines an application-programming interface for Java.

## 14. Define ODBC.

- ODBC-Open Data Base Connectivity.
- It is a standard for accessing different database systems.

**15. What are the advantages of web services?**

- Develop reusable application-components.
- Web services application-components like: currency conversion, weather reports, or even language translation as services.
- Connect existing software.
- Web services can exchange data between different applications and different platforms.

**16. Give an example of a web services registry and its functions?[NOV-2012][MAY-2012]**

XML  
SOAP  
WSDL

**17. State the use of web server logs and lists the contents of a message log. (APRIL-2011)**

- The server log may be used to examine traffic patterns by time of day, day of week, referrer, or user agent.
- Efficient web site administration, adequate hosting resources and the fine tuning of sales efforts can be aided by analysis of the web server logs.
- Marketing departments of any organization that owns a website should be trained to understand these powerful tools

**18. Mention some of the disadvantages of Web services[MAY-2014]**

1. What performance issues affect Web services
2. lack of standards affects Web services
3. new Web service technology can be a problem

**PART B**

**1. Write short notes on Ajax in XML [MAY-2014]**

2. Ajax Introduction
3. Ajax - JavaScript Techniques

4. Updating the order.html Page
5. Quick Ajax Recap AJAX XML
6. Example-The AJAX Server Page

**7. Explain About JAX –RPC Concept[MAY-2014]**

- An Example Application: SunReg Web Service
- A Note About Software Versions Used in This Example
- Developing a Service
- Coding the Service Endpoint Interface Coding the Service Endpoint Class-
- Defining the Configuration File-Defining the Deployment Descriptor
- Compiling the Service
- Deploying the Service

**8. How to Write the web service and java web service client (MAY/JUNE 2013) [NOV/DEC 2012]**

- JAX RPC technology manages communication between a web service and client.
- These are the basic steps for creating the web service and client
- A service endpoint interface must conform to a few rules-Building the Service
- The compile-service Task
- The generate WSDL Task
- Packaging and Deploying the Service
- Specifying the Endpoint Address
- Deploying the Service

**9. How to describe the Web services[MAY-2014]**

- Defining Services
- Port Types and Operations
- Binding It All Together

**10. Explain SOAP technology for providing the communication between the data . [APR-2011] object. (MAY-2013) [NOV-2012][MAY-2014]**

- What is SOAP
- SOAP Syntax
- Syntax Rules
- Skeleton SOAP Message
- SOAP Envelope Element
- The encodingStyle Attribute
- SOAP Header Element
- SOAP Body Element
- SOAP Fault Element
- SOAP Fault Codes
- SOAP HTTP Binding Soap HTTP Binding
- A SOAP request-The SOAP response