

**UNIT-I  
SCRIPTING  
PART A**

**1. State the use of Internet Protocol.** (May/June 2012)

- It provides connection-less service
- Best-effort delivery of datagrams
- Provides fragmentation and reassembly of datagrams to support data links with different maximum-transmission unit (MTU) sizes

**2. Define WWW.**

- WWW means World Wide Web – It is a collection of software and corresponding protocols used to access the resources over the network. It is used to connect wide area network.
- WWW contains huge amount of documents, images and other resources which can be accessed using the hyperlinks. Thus the internet can be used through the web.

**3. State the function of DNS.** (Nov / Dec 2012)

Domain Name Service (DNS) is the service used to convert human readable names of hosts to IP addresses. The main function of DNS is name resolution. Name resolution is the process of mapping a domain name to an IP address.

**4. Define URI.** (April / May 2011)

The Uniform Resource Identifier (URI) is a string used to identify the resources on the internet. The URI is a combination of URL and URN. Syntax: Scheme://authority/path?query

**5. List any four common browsers.** (Nov / Dec 2011)

- (i) Internet Explorer
- (ii) Mozilla Firefox
- (iii) Opera
- (iv) Google Chrome

**6. What do you mean by Relative URLs?** (May / June 2014)

A *relative URL* locates a resource using an absolute URL as a starting point. In effect, the "complete URL" of the target is specified by concatenating the absolute and relative URLs. A relative URL typically consists only of the *path*, and optionally, the *resource*, but no *scheme* or *server* i.e. Relative URLs are a way to identify a resource relative to their context.

**7. Write the function of a Web Server.** (May / June 2014)

Various functions of web server are:-

1. The web server accepts the requests from the web browsers.
2. The user request is processed by the web server.
3. The web server respond to the users by providing the services requested.

8. What are all the predefined functions in java script?

JavaScript predefined functions are such as escape, unescape,eval, isNaN, toString, alert, and others.

- **isNaN(value)** // for Not A Number
- **parseFloat()** - Returns floating point numbers.
- **parseInt()**- Converts a string to an integer returning the first integer encountered which is contained in the string.

9. How will you create a password field in a HTML form?(Nov /Dec 2011) The password field in the HTML form can be created using the <input> tag.

Syntax:

```
<form name=||form_name||>
    Password: <input type=||password||/>
</form>
```

10. Define Cascading Style sheet? (MAY/JUNE 2013)

The Cascading Style Sheet is a markup language used in the web document for presentation purpose. The primary intension of CSS is to separate out the web content from the presentation. This separation of structure from presentation simplifies maintaining and modifying a document's layout.

11. Mention the need for Cascading Style Sheets. (April/May 2011)

- (1) CSS allows the separation between the information contained in a document and its presentation.
- (2) Any change in the presentation can be made without disturbing the information of the document.
- (3) CSS allows developers to give the consistent appearance to all elements of the web page.

12. Give the syntax of a CSS rule. (Nov /Dec 2011, May /June 2012)

- Selector string
- Declaration block

13. What is an array? Give the syntax.

An array is a consecutive memory variables stored using a same variable name.

The following points should always be remembered when using arrays in Javascript:

- ✓ The array is a special type of variable.
- || Values are stored into an array by using the array name and by stating the location in the array you wish to store the value in brackets.

```
Var ary2 = new Array(4, true, —OK||);
```

```
Var ary3 = [ [—X||, —0||, —0||], [—0||, —X||, —0||], [ —0||, —0||, —X||];
```

14. List the different <style> tag Font Attributes

**FONT ATTRIBUTES:**

**Attribute Values**

**Name**

**Font-family** A comma-delimited sequence of font family names (Serif, sanserif, cursive)

**Font-style** Normal, italic or oblique.

**Font-size** A term that denotes absolute size (xx-small, x-small, small, medium, large, x-large, xx-large), relative size (larger, smaller), a number (of pixels), percentage (of the parent element's size).

**Font-weight** Normal, bold, lighter, or one of the nine numerical values (100,200 to 900)

### 15. List the different `<style>` tag color and background attributes.

#### Attributes Values

**Color** Sets an element's text-color- a color name or a color code

---

**Background-color** Specifies the color in an element's background. A color name or a color code.

**Background-image** Sets the background image. A URL or none.

**Background-repeat** Within the background image specified, sets up how the image repeats throughout the page. Repeat-x (repeats horizontally), repeat-y (repeats vertically), repeat(both), no-repeat.

### 16. State the types of java script statements with example. (Nov / Dec 2013)

- **Expression Statement:** It is a statement that consists entirely of an expression. Example: `j++;`
- **Block Statement:** It is a set of statements enclosed in braces { and }. Example: 

```
{
i=5;
j++;
}
```
- **Keyword Statement:** It is a statement that begins with keywords. Example: `var a=10; if(a<10) { ... }`

### 17. What are all the two types of JavaScript Objects?

Types of JavaScript objects

**Native:** provided by scripting engine

If automatically constructed before program execution, known as a built-in object (Ex: window)

**Host:** provided by host environment (Ex: alert and prompt are host objects)

### 18. What is Object in Java Script? Give an example.

An object in Java Script is a set of properties, each of which consists of a unique name along with a value belonging to one of Java Script's six data types. Properties in Java Script are comparable to Java instance variables (i.e. non static variables declared outside any method)

**Example** `var o1 = new Object()
o1.testing = —This is a test!;
delete o1.testing;`

**19. Define java script Function.**

JavaScript functions are defined using the key word "**function**" followed by its name and variables being passed to it in the following

**syntax:**

```
function function-name(parameter-list)  
{  
  declarations;  
  statement1;  
  statement2;  
}
```

**20. Explain array creation in JavaScript with example.(April / May 2011)**

In JavaScript, the array can be created using Array object. Suppose we want to create an array of 10 elements, then we can write **var arr=new Array(10);**

Using **new** operator, we can allocate the memory dynamically for the arrays.

**21. List out the java script built in Objects (May / June 2012)**

- The global Object (window)
- String
- Number
- Boolean
- Date
- Math
- Array

**22. What is DOM?**

The Document Object Model is a set of platform- independent and language-neutral API that will allow programs and scripts to dynamically access and update the content, structure and style of XML, XHTML and JavaScript documents.

**23. Write down the usage of 'canvas' in HTML 5?(Nov / Dec 2015)**

HTML5 element <canvas> gives you an easy and powerful way to draw graphics using JavaScript. It can be used to draw graphs, make photo compositions or do simple (and not so simple) animations. Canvas has several methods for drawing paths, boxes, circles, text, and adding images. A canvas is a rectangular area on an HTML page. By default, a canvas has no border and no content.

**Basic Canvas Example**

```
<canvas id="myCanvas" width="200" height="100" style="border:1px solid #000000;">  
</canvas>
```

**24. What are client side scripts and server side scripts? Differentiate. (Nov / Dec 2015)****Client-side Environment**

The client-side environment used to run scripts is usually a browser. The processing takes place on the end users computer. The source code is transferred from the web server to the users computer over the internet and run directly in the browser.

The **serverside environment** that runs a scripting language is a web server. A user's request is fulfilled by running a script directly on the web server to generate dynamic HTML pages. This HTML is then sent to the client browser.

### PART-B

1. Explain the XHTML syntax and semantics in details.(APRIL/MAY 2013)
2. Give brief explanation about java script Built-in Objects. (May /June 2013)
3. Explain about the all CSS Styles and its Core Syntax with an example.
4. Describe how do you use java script for form validation? Develop a complete application that would include functions to validate the user data. (12) (May /June 2014)
- 5.How do you create frames? Why do we need them? Develop an application to explain the same.(16) (May / June 2014)
6. Write a JavaScript program to delete the **rollno** property from the following object.  
Sample object: `var student={ name:|Santhosh Ravyl, class: —VII, roll no: 29};`  
Write a JavaScript program to search a date (MM/DD/YYYY) within the string. (6)
7. Apply CSS to a web page with the following requirements(16) (Nov/Dec 2015)
  - (i) Paint the background gray
  - (ii) Add a background image of a submarine
  - (iii) Paint the sidebar yellow
  - (iv) Set a color to the span elements (different color for each class)

## UNIT-II JAVA PART A

### 1. Define Encapsulation (NOV/DEC2011)

Wrapping up of data and functions into single unit.

```
Class x
{
    int a;
    void fun()
{
}
}
```

### 2. What's the difference between an interface and an abstract class? (APR/MAY2011)

An abstract class is a collection of abstract methods and concrete methods.

Interface is a collection of only abstract methods.

### 3. What's the difference between constructors and other methods?

Constructors must have the same name as the class and cannot return a value.

They are only called Once while regular methods could be called many times.

### 4. Can you call one constructor from another if a class has multiple constructors Yes. Use this() syntax.

### 5. Explain the usage of Java packages. (APR/MAY2011)

This is a way to organize files when project consists of 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 classes.

### 6. What are the uses of Encapsulation

Encapsulation is the technique of making the fields in a class private and providing access to the fields via public methods. If a field is declared private, it cannot be accessed by anyone outside the class, there by hiding the fields within the class.

### 7. What is an abstract class in java (NOV/DEC2011) & (NOV/DEC2012)

- An abstract class is a class that is declared abstract—it may or may not include abstract methods. Abstract classes cannot be instantiated, but they can be subclassed.
- An abstract method is a method that is declared with out an implementation (without braces, and followed by a semicolon)

### 8. Give the properties of abstract classes and methods .

An abstract class is a class that is declared abstract—it may or may not include abstract methods. Abstract classes cannot be instantiated, but they can be subclassed. An abstract method is a method that is declared with out an implementation (without braces, and followed by a semicolon.)

**9. Why does Java not support destructors and how does the finalize method help in garbage collection? (APRIL/MAY2011).**

The purpose of a Destructor is usually to clear off unused variables and cleanup the memory. Java has in built memory handling mechanisms (Garbage collection) that clear off unused memory automatically. Hence there is no requirement for destructors or methods.

**11. Mention some of the separators used in java programming (NOV/DEC2012)**

Programming simple I/O operations is easy, which involves only a few classes and methods. You could do it by looking at a few samples. Programming efficient, portable I/O is *extremely* difficult, especially if you have to deal with different character sets based I/O.

**12. Define the term class. (MAY/JUNE 2012)**

A **class** specifies the design of an object. It states what data an object can hold and the way it can behave when using the data.

**13. What is finalized method? (MAY/JUNE 2012)**

**Finalize method in java** is a special method much like main method in java. Finalize() is called before Garbage collector reclaims the Object, its last chance for any object to perform clean up activity.

**14. Difference between static and dynamic binding in java (APR/MAY2011)**

- 1) Static binding in Java occurs during Compiletime while Dynamic binding occurs during Runtime.
- 2) private, final and static methods and variables use static binding and are bonded by compiler while virtual methods are bonded during runtime based upon runtime object.

**15. How dynamic initialization of variables is achieved in java (NOV/DEC2012)**

Java allows variables to be initialized dynamically, using any expression valid at the time the variable is declared. `double a=3.0, b=4.0 double c=Math.sqrt(a*a+b*b);`

**16. How to create one dimensional in Java.**

A one-dimensional array is, essentially, a list of like-typed variables. To create an array, you first must create an array variable of the desired type. The general form of one-dimensional array declaration is `var-name[ ];`

**17. What is the purpose of final keyword in java (NOV/DEC2011?)**

The final keyword precedes a declared constant which after instantiation cannot be modified. Examples.

`final double PI=3.14;`

`PI=1234; // does not compile`

**18. What is polymorphism in java (NOV/DEC2011)**

The word polymorphism 'literally means a state of having many shapes' or 'the capacity to take on different forms'. When applied to object oriented programming languages like Java, it

describes language's ability to process objects of various types and classes through single, uniform interface.

**19. Why is multiple inheritance using classes a disadvantage in java? MAY/JUNE 2013.**

First of all class does not support multiple inheritance consider class A as super class class B and C are sub class of A. class cannot extend more than one class think class D extends B and the method present in class A,B,C are alike if u call a method in class d we don't know which method we are calling either A or B or c, There across Diamond problem and method ambiguity.

**20. Write down the syntax for defining interface(NOV/DEC2012)**

Object interface allow you to create code which specifies which methods a class must implement, without having to define how these methods are handled. Interfaces are defined using the interface keyword, in the same way as a standard class, but without any of the methods having their contents defined.

All methods declared in an interface must be public, this is the nature of an interface.

```
Interface iTemplate
{
public functionsetVariable($name,$var);
public functiongetHtml($template);
}
```

**21. How to define an interface? MAY/JUNE 2013.**

Java includes concept called interfaces. A Java interface is a bit like a class, except you can only declare methods and variables in the interface. You cannot actually implement the methods. Interfaces are a way to achieve polymorphism in Java. I will get back to this later in this text.

**22. Define multithreading in java(NOV/DEC2012)**

The ability of an operating system to execute different PARTs of a program, called threads, simultaneously. The programmer must carefully design the program in such a way that all the threads can run at the same time without interfering with each other. Examples: machine has 16 cup's. The job uses all 16 cup's to process.

**23. What are the two ways of creating threads ?**

java has 2 ways to create Threads.

1) Thread Class

2) RunnableINTERFACE

i) Thread class won't allow you to extend more class while interface allows you

ii) Runnable has only one method need to implement mandatory while Thread has methods other than

Run also.

**24. What is thread.(MAY/JUNE 2012)**

A thread is a single sequential flow of control within a program.

**25. Write a java program to find Fibonacci series.(MAY/JUNE 2012)**

```
classFibonaci
{
Public static void main(String args[])
{
```

```
int num =5;
System.out.println("*****Fibonacci Series*****");
int f1, f2=0, f3=1;
for(int i=1;i<=num;i++){
System.out.print(" "+f3+" ");f1 =f2;f2 =f3;f3 =f1 +f2;}}}
```

**Output -** 1 1 2 3 5 8 13 21

**26. Write a Java code to check if the given string is palindrome or not. (Nov / Dec 2015)**

```
import java.util.*;
class Palindrome
{
public static void main(String args[])
{
String original, reverse = "";
Scanner sc= new Scanner(System.in);
System.out.println("Enter a string to check if it is a palindrome");
original = in.nextLine();
int length = original.length();
for ( int i = length - 1; i >= 0; i-- ) reverse = reverse +
original.charAt(i); if (original.equals(reverse))
System.out.println("Entered string is a
palindrome."); else
System.out.println("Entered string is not a palindrome.");
}}
```

**Output-**

```
javac Palindrome.java
java Palindrome
Enter a string to check if it is a palindrome
Madam
Entered string is a palindrome
```

### PART B

- 1.(i) Describe in detail the concept of object construction. (APR/MAY2011)  
(ii) Explain the use of the Finalize method in Object destruction.
- 2.(i) discuss in detail about classes and there relationships that can exist between classes.  
(ii) Write a detailed description of the method involved in defining our own classes.
3. Explain the features of Java. (NOV/DEC2012)
- 4.(i) explain the concept of Abstract classes .  
(ii) Discuss the use of protected access.
5. What is constructor? What is the use of constructors? NOV/DEC2011
6. What is Multithreading. Explain with an example.

7.Explain String Handling in Java with an example program.

8.Explain how exception handling mechanism has been implemented in Java. Also explain various types of checked and unchecked exceptions that may arise in Java with suitable examples.(16) (NOV/DEC 2015)

9. Write a program that runs 5 threads, each thread randomizes a number between 1 and 10. The main thread waits for all the others to finish, calculates the sum of the numbers which were randomized and prints that sum. You will need to implement a Runnable class that randomizes a number and store it in a member field. When all the threads have done, your main program can go over all the objects and check the stored values in each object.(16) (NOV/DEC 2015)

2129-SJCE

## UNIT-III JDBC PART A

### 1. What is JDBC?

**JDBC** is a Java database connectivity technology (Java Standard Edition platform) from Oracle Corporation. This technology is an API for the Java programming language that defines how a client may access a database. It provides methods for querying and updating data in a database.

### 2. What are the various database connectivity supported in Java? (NOV/DEC 2015)

Type 1: JDBC-ODBC Bridge Driver:

Type 2: JDBC-Native API:

Type 3: JDBC-Net pure Java:

Type 4: 100% pure Java:

### 3. What are the basic steps to use database connectivity in Java.

- Establish a connection
- Create JDBC Statements
- Execute SQL Statements
- GET ResultSet
- Close connections

### 4. What are the two pieces of a network?

Most network applications are divided into two pieces namely clients and server, the user can able to establish communication between client and server using links.

### 5. What does mean by UDP? (MAY/JUNE 2008)/ (MAY/JUNE 2011)

UDP (User datagram protocol) is a simple layer protocol the application writes a datagram to a UDP socket, which is encapsulated as either an IPV4 datagram, which is sent to its destination. But there is no guarantee that a UDP datagram ever reaches its final destination.

### 6. What do u mean by TCP? (MAY/JUNE 2009)

TCP (Transmission control protocol) provides connections between clients and servers. TCP client establishes a connection with given server exchanges data with server across the connection, and then terminates the connection. It also provides reliability and flow control.

### 7. List out the socket functions for elementary TCP-Client? (MAY/JUNE 2010)

- i) Create Socket
- ii) Connect
- iii) Write
- iv) Read
- v) Close

### 8. List of the socket functions for elementary TCP-Server?(MAY/JUNE 2010) .

- ii) Create socket
- iii) Bind
- iv) Listen
- v) Accept

- v) Write
- vi) Read
- vii) Close

**9. How the TCP socket is created? (MAY/JUNE 2012) (MAY/JUNE 2011)**

The socket function creates an internet (AF\_INET) stream (SOCK\_STREAM) socket is a name for a TCP socket. The function returns a small integer descriptor used to identify the socket in all future function calls.

```
Socketfd=socket (AF_INET, SOCK_STREAM, 0);
```

**10. How are the port number classified ?(NOV/DEC 2012),( NOV/DEC 2013)**

A number from 0 through 1023 used to identify a network service on an IP network (the Internet). Residing in a field in the TCP or UDP header, the port number directs packets to the appropriate application in the server. The most well-known port is 80, which identifies HTTP traffic for a Web server. For details about port numbers, see [TCP/IP port](#).

**11. Java Beans vs. Class Libraries.**

Beans are appropriate for software components that can be visually manipulated Class libraries are good for providing functionality that useful to programmers, and doesn't benefit from visual manipulation

**12. JavaBean Characteristics**

- a public class with 0-argument constructor
- it has properties with accessory methods
- it has events
- it can customized
- its state can be saved
- it can be analysed by a builder tool

**13. List out security issues on javabeans**

- JavaBeans are subject to the standard Java security model
- The security model neither extended nor relaxed.
- If a bean runs as an untrusted applet then it will be subject to applet security
- If a bean runs as a stand-alone application then it will be treated as a normal Java application.

**14. What are the steps for compiling javabeans program**

- Compile: javac FirstBean.java
- Create a manifest file:
  - manifest.txt
  - Name: FirstBean.class
  - Java-Bean: True
- Create a jar file:
- jar cfm FirstBean.jar mani.txt FirstBean.class

**15. What are the properties of java beans?**

- Bean's appearance and behaviour -- changeable at design time.
- They are private values
- Can be accessed through getter and setter methods
- getter and setter methods must follow some rules -- design patterns (documenting experience)

**16. Write the syntax for Bind function? (NOV /DEC 2009)**

```
int bind (intsockfd, conststructsockaddr * myaddr, socklen_t addrlen);
```

**17. What are the steps in RMI**

- Create the Interface to the server
- Create the Server
- Create the Client
- Compile the Interface (javac)
- Compile the Server (javac)
- Compile the Client (javac)
- Generate Stubs and Skeletons (rmic)

**18. How to run RMI Program**

- Start the RMI registry
- rmiregistry is in the JSDK bin directory
- Start the RMI Server
- Start the RMI Client

**19. Write about RMI Registry**

- The RMI Registry is a naming service provided with the JDK as a teaching tool or for a small number of Remote Objects.
- Uses port 1099 as its default port.
- Can be considered to be a reference implementation.
- runs out of steam above a 100 objects.
- runs on same machine as the remote object.

**20. Can the InetAddress class functionality to detect the IP Addresses, be handled using URL class? If yes, Explain? (NOV/DEC 2015).**

Yes, the InetAddress class functionality to detect the IP Addresses, be handled using URL class. The java.net.URL class provides public String getHost() methods which returns the host name of the URL.

**Example:**

```
import java.io.*; import java.net.*; public class URLLDemo { public static void main(String[] args) { try {
```

```
URL url=new URL("http://www.javatpoint.com/java-tutorial");
System.out.println("Host Name: "+url.getHost());
}
catch(Exception e){System.out.println(e);
}
}
}
```

**Output:**

Host Name: www.javatpoint.com

**PART B**

1. Explain JDBC implementation.
2. Explain Handling of Database Queries with suitable example.
3. i) Explain in detail about TCP/IP protocols for internetworking and management.  
**May/June 2009(10) / May/June 2012 (MAY/JUNE 2013) (MAY/JUNE 2014)**
- ii) Explain about socket, connect, bind, listen and accept functions.  
**May/June 2007(6) NOV/DEC11)**
4. Explain TCP/IP layering in detail with neat sketch. (16).
5. Explain TCP Socket and UDP Socket in details.
6. Explain RMI Architecture with an example.
7. Explain java beans concept in details.
8. Write a program of addition of two numbers using java beans.
9. (i) Create a TCP server which accepts data from a TCP client and stores it in a file. The data should be combined and sent back to the client only after receiving twice from the client. (8)  
**(NOV/DEC2015)**
- (ii) Write code to implement a Telephone directory application where the administrator on entering his appropriate user id and password (requires validation of the form) should be able to add, delete or modify the records in the database use Java script and JDBC (MySQL or ORACLE).
10. What is a Java bean? Write down the properties of a Java Bean in detail. (8) **(NOV/DEC2015)**

## UNIT-IV APPLETS PART-A

### 1. Define Event Propagation.

*Event propagation* fires even from one process to other process. An event propagates from the window, document, or body element (depending on the event type) inward toward the target element.

### 2. What are all the three type of Event Listeners? (Nov2012)

There are 3 types of event listeners.

A Capturing Event Listener is a listener associated with an ancestor (in document tree) of the target node and that was created with a call to `addEventListener()` that had its third argument set to true.

A Target Listener is one of the listeners specifically added to the target node with its third argument false.

A Bubbling Listener is a listener associated with an ancestor of the target node that was created with a call to `addEventListener()` that had its third argument set to false.

### 3. What is Servlet? ( May / June 2012, May / June 2013)

Servlets are snippets of Java programs which run inside a Servlet Container. A Servlet Container is much like a Web Server which handles user requests and generates responses.

### 4. What is Parameter Data?

The most frequently used portion of the HTTP request, is called parameter data of the request. The Question Mark(?) within a URL, marks the end of the path portion of the

URL and the beginning of the query portion of the URL, and that the query portion of the URL

consists of query string.

`http://www.example.com/servlet/PrintThis?arg=aString.`

### 5. What do you mean by Servlets Generating Dynamic Content?

Dynamic content means the content which gets changed according to the users input. eg. if I enter my name it should print my name if someone enter other name it should print other name and hence the name is dynamic content.

Techniques used for Generating Dynamic Content are ,

**Common Gateway Interface (CGI).**

**Java Servlets**

### 6. What do you mean by Cross-site scripting attack?

The script could then take various malicious actions : modifying content and links on the comments page displayed in browsers, redirecting one browser page to another browser page entirely, etc is known as cross-site scripting attack.

### 7. What is Session?

A session is pretty much what it sounds, when a user makes a page request to the server, the server creates a temporary session to identify that user. So when that same

user goes to another page on that site, the server identifies that user. So a session is a small and temporary unique connection between a server and the user enabling it to identify that user across multiple page requests or visits to that site. Each HTTP request is examined by the server to see if it contains special identifier known as Session ID.

### 8. What is Session Termination?

By default, each session expires if a server-determined length of time elapses between a session's HTTP requests

Server destroys the corresponding session object  
Servlet code can:

Terminate a session by calling **invalidate()** method on session object

Set the expiration time-out duration (secs) by calling **setMaxInactiveInterval(int interval)**

### 9. What is a Cookie? (Nov / Dec 2012, May / June 2013)

A cookie is a name/value pair that a web server sends to a client machine as part of an HTTP response, specifically through the Set-Cookie header field of an HTTP response, specifically through the Set-Cookie header field. Browsers will typically store the cookie pairs found in the response in a file on the client machine. Then, before sending a request to a web server, the browser will check to see if it has stored any cookies received from this server. If so, the browser will include these cookies in the Cookie header field of its HTTP request.

### 10. What is URL Rewriting? (Nov / Dec 2011, May / June 2014)

URL rewriting is an alternative to passing a session ID between server and client through HTTP headers is to pass it via the HTML documents themselves. That is, an alternative is for the server to write the session ID within every HTML document it returns to the client in such a way that the URLs that the client subsequently requests will contain the session ID. The server accomplished this by adding the session ID to every servlet URL appearing in any page sent to the client.

### 11. Write short notes on Graphical User Interface

Graphical User Interface (GUI) offers user interaction via some graphical components. For example our underlying Operating System also offers GUI via window, frame, Panel, Button, Textfield, TextArea, Listbox, Combobox, Label, Checkbox etc. These all are known as components. Using these components we can create an interactive user interface for an application.

### 12. Examples of GUI based Applications

Following are some of the examples for GUI based applications.

- Automated Teller Machine (ATM)
- Airline Ticketing System
- Information Kiosks at railway stations
- Mobile Applications
- Navigation Systems

**13. Advantages of GUI over CUI**

- GUI provides graphical icons to interact while the CUI (Character User Interface) offers the simple text-based interfaces.
- GUI makes the application more entertaining and interesting on the other hand CUI does not.
- GUI offers click and execute environment while in CUI every time we have to enter the command for a task.
- New user can easily interact with graphical user interface by the visual indicators but it is difficult in Character user interface.

**14. What is an Event?**

Change in the state of an object is known as event i.e. event describes the change in state of source. Events are generated as result of user interaction with the graphical user interface components. For example, clicking on a button, moving the mouse, entering a character through keyboard, selecting an item from list, scrolling the page are the activities that causes an event to happen.

**15. What is Foreground Event.**

The events can be broadly classified into two categories:

- **Foreground Events** - Those events which require the direct interaction of user. They are generated as consequences of a person interacting with the graphical components in Graphical User Interface. For example, clicking on a button, moving the mouse, entering a character through keyboard, selecting an item from list, scrolling the page etc.

**16. What is Event Handling?**

Event Handling is the mechanism that controls the event and decides what should happen if an event occurs. These mechanisms have the code which is known as event handler that is executed when an event occurs. Java Uses the Delegation Event Model to handle the events. This model defines the standard mechanism to generate and handle the events. The Delegation Event Model has the following key participants namely.

**17. Write about the life-cycle of an applet. (NOV/DEC 2015)**

The lifecycle of an applet are `init()`, `start()`, `paint()`, `stop()` and `destroy()`.

- **init()** method is called at the time of starting the execution. This is called only once in the life cycle.
- **start()** method is called by the `init()` method. This method is called a number of times in the life cycle; whenever the applet is **deiconified**, to make the applet active.
- **paint()** method is called by the `start()` method. This is called number of times in the execution.
- **stop()** method is called whenever the applet window is **iconified** to inactivate the applet. This method is called number of times in the execution.
- **destroy()** method is called when the applet is closed. This method is called only once in the life cycle.

**18. Write about the life-cycle of a Servlet (NOV/DEC 2015)**

**Init()** – It performs servlet initialization tasks. This method is called when the servlet is loaded in the memory for the first time.

**Service()** – is a method actually called when an HTTP request is received; this method, in turn, calls doGet(). Normally, you should not override service().

**Destroy()**– method will be called when the server is in the process of taking a servlet out of service, usually when the server itself is shutting down.

**19. What is an Applet.**

An applet is a small internet-based program written in java. The applet is usually embedded in an HTML page on a website and can be executed from within a browser.

**20. What is Background Event.**

**Background Events** - Those events that require the interaction of end user are known as background events. Operating system interrupts, hardware or software failure, timer expires, an operation completion are the example of background events.

**PART B**

1. (i) With a suitable example discuss about event propagation. (8) (Nov / Dec 2012)  
(ii) Explain in detail about event object and event listeners with example. (8)
2. Discuss about the architecture and life cycle of a servlet with example. (16)  
Explain how java servlets perform session handling.
4. Explain the concepts Sessions and Cookies in with an example program.
5. What is Session? Explain how client state is maintained using session and also explain about session tracking and session managing an example. (16) (Nov/Dec 2011)
6. Write a servlet to illustrate the principles of Cookies and explain. (16)  
(May / June 2013, May / June 2014)
7. Explain in detail with an example the dynamic content generation by a servlet. (8)
8. Explain JSP Environment set up with TOMCAT server.
9. Explain JSP Architecture with neat diagram.
10. Explain JSP life cycle with neat diagram.
11. (i) In an Applet, create a frame with two text fields and three buttons (Cut, Copy & Paste). Data entered in the first text field should respond, according to the buttons clicked. (8)  
(ii) Write a JavaServlet program to implement Cookies using get\_cookies(), get\_name() and get\_value() methods. (8)

## UNIT -V

### XML AND WEB SERVICES

#### PART A

#### 1. What is XML?

- Extensible Markup Language and it is Developed by W3C in 1996.
- A subset of SGML that can define your own tags.
- XML is most widely used for transmitting structured data over the web. It is used extensively in many web servers.

#### 2. What are the XML Syntax Rules?

- An XML document consists of **Markup and it has two types arg and references**
- An XML document consists of **Character data**: everything markup
- Element and attribute names are case sensitive
- Element tags are of three types: Start tag, End tags(which begin with </), and empty-element tags(which end />).
- A well-formed XML document has XML syntax rules and a single root element

#### 3. Mention any two XML versions .

- The first (**XML 1.0**) - 1998
- The second (**XML 1.1**) – 2004

#### 4. What do you mean by XML declaration? Give an example. (MAY/JUNE 2013)

The XML declaration is a processing instruction that identifies the document as being XML. All XML documents should begin with an XML declaration.

For example, `<?xml version="1.0" encoding="UTF-8" standalone="no" ?>`

#### 5. What is meant by a XM namespace? (April / May 2011, 2014, Nov / Dec 2012, 2013) An XML Namespace is a collection of element and attributes names associated with a particular XML vocabulary (XHTML) through an absolute URI known as the namespace name. By using name space, the XML allows us to create different elements which are having the common name.

#### 6. What are all the types RSS 0.91 Elements?

- **rss**- Root element .Specifies versions of RSS used.
- **Channel**- Contains the contents of the document .
- **Item** – Represents one item of interest at the web site serving the RSS document.
- **Description** – A somewhat longer ( 500 characters ) descriptions of the channel or item containing description element.
- **Link** – A URL linking a channel or item to a web document.

#### 7. What is Asynchronous JavaScript And XML( AJAX)?mention its uses.

Ajax (Asynchronous Javascript and XML ) is a combination(XML,javascript,DOM) of several technology used to load or retrieve the data

from server using asynchronous communication mode of the XMLHttpRequest host object without reloading or refreshing the Web page.

**8. What do you mean by DOM – based XML processing?**

In DOM – based XML processing XML document is first input and parsed, creating a tree of nodes representing elements, text, comments and so on. After tree method can be called to modify (adding or removing nodes) the tree, extract data from it and so on.

**9. What is the purpose of XSLT? (Nov / Dec 2011)**

The purpose of XSLT is to define the XML document transformations and presentations. Thus using XSLT, the XML document can be transformed into XHTML documents or some other XML document.

**10. What is DOM?**

"The W3C Document Object Model (DOM) is a platform and language-neutral interface that allows programs and scripts to dynamically access and update the content, structure, and style of a document."

**11. What are all the DOM parts / levels?**

The DOM is separated into 3 different parts / levels:

- Core DOM - standard model for any structured document.
- XML DOM - standard model for XML documents.
- HTML DOM - standard model for HTML documents.

**12. What is SAX (Simple API for XML)? (MAY/JUNE 2013)**

SAX uses an event based parsing technique which prevents it from having to build a potentially huge document tree in memory, which is the technique DOM uses.

**13. What is a parser? (MAY/JUNE 2013)**

A parser, in this context, is a software tool that pre-processes an XML document in some fashion, handing the results over to an application program. The primary purpose of the parser is to do most of the hard work up front and to provide the application program with the XML information in a form that is easier to work with.

**14. What are all the two types of XML parsers?**

**Two types of XML parsers**

There are at least two types of XML parser APIs commonly used for the development of programs to process XML documents:

- Tree-based APIs
- Event-based APIs.

**15. How is XML parsing done with SAX? (Nov / Dec 2011)**

The XML parsing can be done with SAX using the following steps:

- (1) Using the BufferedReader class the contents of XML document are read.
- (2) Then using XMLReadFactory, XML reader is created. This reader parses XML document.
- (3) Create reader object using createXMLReader.
- (3) With the help of the reader object, the method parse() is invoked for parsing the XML document.

**16. Define XSL**

The Extensible Style sheet Language (XSL) is an XML vocabulary that decides how an

XML document should look on the web browser. XSL consists of three parts:

- (1) XSLT
- (2) XPath
- (3) XSL-FO

**17. Explain two types of XSL information.**

An XSL document normally contains **two types of information**:

- **Template data** - Which is text that is copied to the output XML text document with little or no change? i.e. Everything in the body of the document that is not XSL markup is template data.
- **XSL markup** - which controls the transformation process always start with —xsl:

**18. Name any four XSL elements .Mentions its use.**

- The **<xsl:variable>** XSL element creates a named variable.
- The **<xsl:value-of>** XSL element processes a value.
- The **<xsl:if>** XSL element invokes the enclosed code if the condition specified by the test attribute is true.
- The **<xsl:sort>** XSL element sorts a list of elements, such as within **<xsl:for-each>**.
- The **<xsl:template>** XSL element encapsulates a segment of XSL code, similar to a method, procedure, or function in other languages.

**19. What are all the XSL Components?**

- **XSL Transformations (XSLT):** Which defines the semantics of the various XSL namespace elements and attributes?
- **XML Path Language (XPath):** Which defines the syntax and semantics of many of the attribute values used in XSL elements for accessing portions of the input XML document attribute values (ex: child::message)
- **XSL Formatting Objects (XSL-FO):** It is a separate XML vocabulary for defining document style properties of an XML document .(print-oriented).

**20. What do you mean by XSL Formatters?**

An XSL formatter is an application that takes an XSL-FO document as input and typically produces output a document in a printer-oriented format such as Adobe Portable Document Format ( PDF )

**PART B**

1. (i) List and explain the XML syntax rules in detail. (8) **(April / may 2011)**  
(ii) Explain how a XML document can be displayed on a browser. (8)
2. Write the short notes on the following with an example:(**Nov / Dec 2013**)  
a. AJAX b. DOM based XML Processing.
3. (i)What do you mean by AJAX? Write the advantages of AJAX. (**May / June 2014**)  
(ii) Write short notes on Event-Oriented parsing. (8)
4. Explain in detail about XSL. (8)
5. (i) Explain the role of XML name spaces with examples. (8)  
(ii) Explain the features of XML path language.
6. (i) Explain XPATH nodes in detail. (8) **(Nov / Dec 2011)**  
(ii) Explain about the object that helps AJAX reload parts of a web page without reloading the whole page. (8)
7. Write XSLT code to display employee details in a table form which is stored in XML.
8. Explain the following with an example:  
a. JSP and Servlet b. Running JSP Application .
9. What is JavaBeans component? How will you use the JSP language elements for accessing Beans in your JSP pages? (16) **(Nov / Dec 2011)**
- 10.Explain in detail the creation, instantiation and usage of Java beans object. (16) **(Nov / Dec 2013)**
11. (i) Write a client server JSP program to find simple interest and display the result in the client.  
(ii)Write about the JSP tag libraries. (6)
12. Explain the model view controller architecture pattern in detail. (8)( **May/June2012,2014**)