

Assignment - I

Q 9. Define

(a) Internal DTD :-

Ans A DTD (document type definition) is referred to as an internal DTD if elements are declared within the XML files.

To reference it as Internal DTD, standalone attribute in XML declaration must be set to yes.

External DTD :-

Ans It's one that reside in a separate document so use the external DTD, you need to link to it from your XML document by providing the URL of the DTD file. This URL is typically in the form of a URL.

Q2.

How would you define a XML schema?
write its various elements.

Ans

XML schema :- It is also called
as XSD (XML Schema Definition)

~~If~~ is used to describe and
validate the structure and content
of XML data. XML schema defines
the elements, attributes and
data type.

~~<xsi:schema xmlns:xsi = "http://www.w3.org/2001/XMLSchema">~~

Elements of XML Schema :-

Simple type element :- It is used
only in the context of the text

e.g :- xs: integer

xs: boolean

xs: string

xs: date

Complex type :- A complex type is a container for other element definitions. This allows you to specify which child elements an element can contain and provide some structure within your XML document.

Global types :- Within the global type, you can define a single type in your document, which can be used all over reference.

Ques 183
What are scripting languages and why JavaScript is used? Write a JavaScript function for validating form data like mandatory fields and Email field?

Ans =

Scripting language is a computer language with a series of command within a file that is capable of being executed without being compiled.

JavaScript is a front-end scripting language developed by Netscape for dynamic content

Add
of
Java
script

JavaScript allows interacting such as

- Implementing form validation
- React to user actions, e.g. handle keys
- changing an image on moving mouse over

- Sections of a page appearing and disappearing.
- Content loading and changing dynamically.
- Performing complex calculations.
- Custom HTML controls e.g. scrollable table.
- Implementing ATAX functionality.

What can Javascript Do?

- Can handle events.
- Can read and write HTML document and modify the DOM tree.
- Can validate form data.
- Can access / modify browser cookies.
- Can detect the user's browser and OS.
- Can be used as object-oriented language.
- Can handle exceptions.
- Can perform asynchronous server calls (ATAX).

→ JavaScript Function :-

< Script >

function studentform ()

```
{ var name = document.form["Reg form"]["name"];  
var email = document.form["Reg form"]["Email"];  
var password = document.form["Reg form"]["password"];  
var phone = document.form["Reg form"]["Phone"];
```

if (name.value == "")

```
{ window.alert("Please enter your name");  
name.focus();  
return false;  
}
```

if (address.value == "")

```
window.alert("Please enter your address");  
address.focus();  
return false;  
}
```

if (email.value == "")

{ window.alert("Please enter a valid
email address");
email.focus();
return false;
}

if (email.value.indexOf(".", 0) < 0)

{ window.alert("Please enter a valid
email address");
email.focus();
return false;
}

if (phone.value == "")

{ window.alert("Please enter
your telephone no.");
phone.focus();
return false;
}

if (password.value == "")

{ window.alert("Please enter
your password");
}

password Sour();
return false;

{

return true;

{ } ~~script~~.

Q4 what is an IP address? Also discuss its various version till today.

Ans

An Internet protocol address is a numerical label assigned to each device connected to a computer network that uses the Internet protocol for communication. An IP address serves two main functions: ~~two main~~ host or network interface identification and location addressing.

version of IP address

→ IPv(4) were the part of the TCP/IP but are not formally assigned.

- An IPv4 address has a size of 32 bits which limits the address space to ~~2^32~~ 4294967296 (2^{32}) addresses. An IPv4 address identifies the network & the host to network.
- An IPv4 address is typically expressed in dotted decimal notation with every eight bits represented by a no. from one to 255 each separated by a dot.

Ex - 192.168.17.43.

TAME - Transport Stream Protocol (SP) is an experimental protocol which is mainly introduced for the public use.

TAME was developed by the Internet Engg Task force (IETF) and was formalized in 1998. This upgrade substantially increased the available address space allowed for 2^{128} addresses. In addition, there were changes

to improve the efficiency of IP packet header, as well as improvements routing & security

Q5. what are the advantage of Javascript ?

"

Ans 2 Implementing form validation -

- React to user action e.g. handle keys
- changing an image on moving mouse over it sections loading & changing dynamically
- performing complex calculations.
- custom HTML controls e.g. scrollable table
- Implementing AJAX functionality
- exception handling
- It can access & modify browser cookie

O46

Compare Java & Javascript. write a
JavaScript program to define a user
defined function for sorting the
values in an array.

Java

- Java is strongly typed lang. & variable must be declare first to use in program.
- In Java type of a variable is checked at compile time.

→ Java is an OOP lang

→ Java applications can run in any virtual machine (JVM) or browser

→ Java uses more memory

Javascript

Javascript is weakly typed lang & have more relaxed syntax & rules

Javascript is an object based scripting language. Javascript code runs on browser only as Javascript is developed for browser only.

Javascript require less memory therefore it is used in web page.

User - define program for sorting

<HTML>

<body>

<button onclick="myfunc()>

Try It </button>

<div id="demo"></div>

var points = [40, 100, 1, 5, 25, 10],

~~function~~ myfun()

document.getElementById("demo")

innerHtml = points;

function myfun()

{

points = points.sort(function(a, b) { return

b - a});

document.getElementById("demo").

innerHTML = points;

}

</script>

</body>

</html>

8.

AssignmentsQ1

what is servlet? Explain its life cycle.

Ans

Servlets - A servlet is a Java programming language class that is used to extend the capabilities of servers that host a request response programming model. Although servlets can respond one commonly used to extend the application hosted by web servers.

Life cycle of servlet :-

The servlet life mainly goes through four stages.

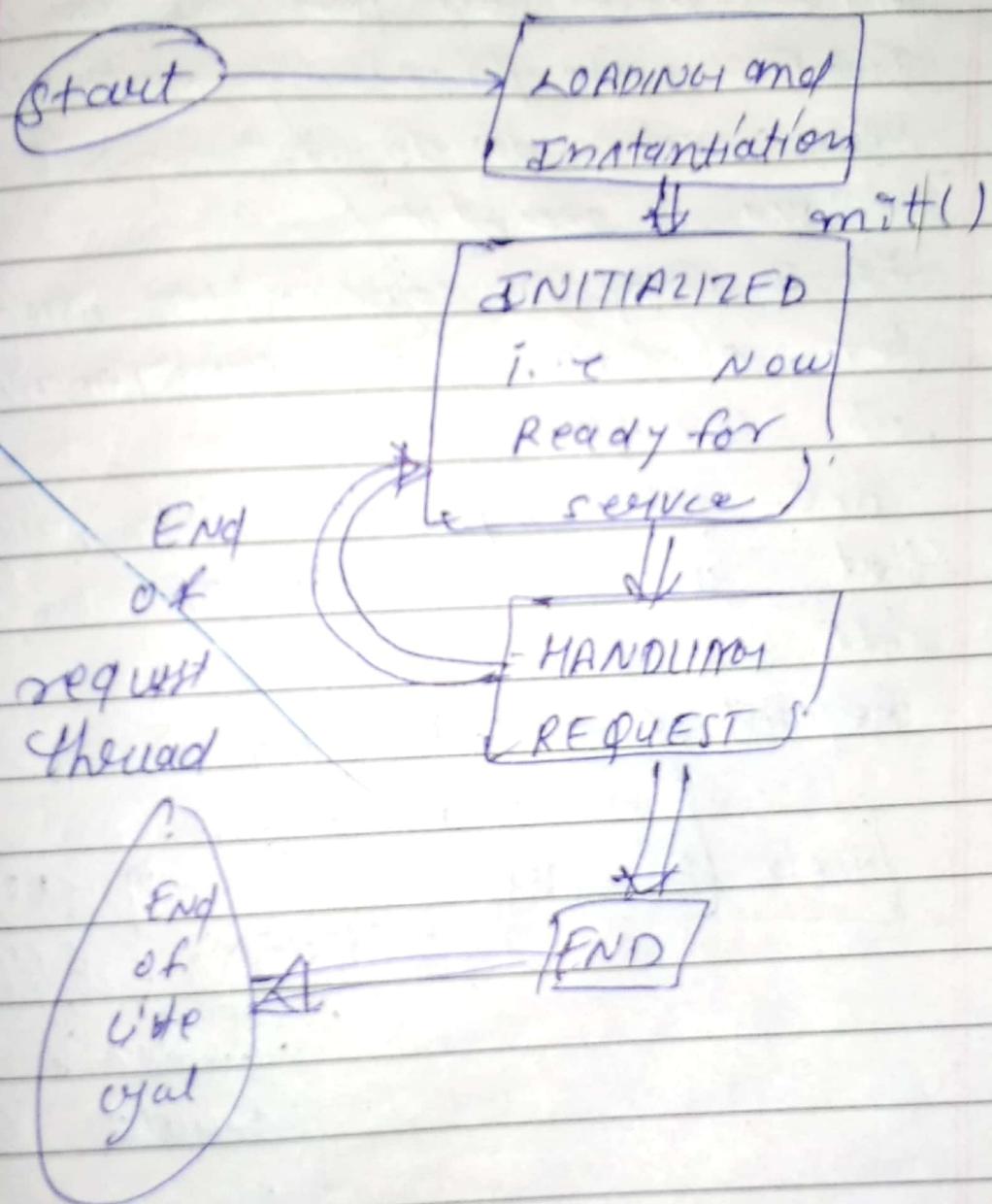
- Loading a servlet.
- Initializing the servlet.
- Request handling.
- Destroying the servlet.

Life cycle of servlet diagram :-

Start.

- Loading AND instantiation
 - Instantiation Ready for service
 - FINDING Recount.

L End - End of life cycle



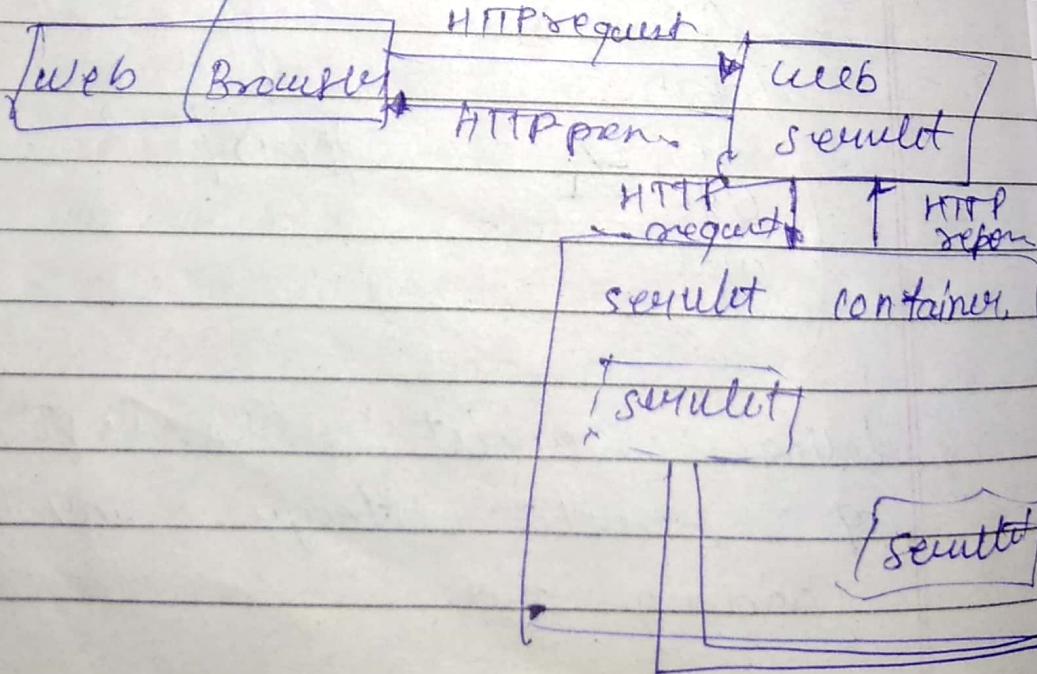
Leading a seminar.—The first draft
of a seminar typically involves
leading and.

Q2

Draw a neat diagram of the architecture of a servlet. Also explain it.

Ans

- Java servlet are part of the sun's J2EE enterprise architecture
- The web development part
- Java servlet
- is a simple, consistent mechanism for extending the functionality of a web server
- Are precompiled Java program that are executed on the server itself
- Requires a servlet container to run



Q3

Draw
value

Ans

Java
class
to
web

- the client is working on a web browser
- there is a database server that hosts databases like MySQL / Oracle
- The J2EE server machine is running on an application server.
- the client interface is provided with JSP / servlet
- The application server manages the relationship b/w the client and database

~~Q3~~ Draw a diagram of JSP architecture? Explain various types of directive with example?

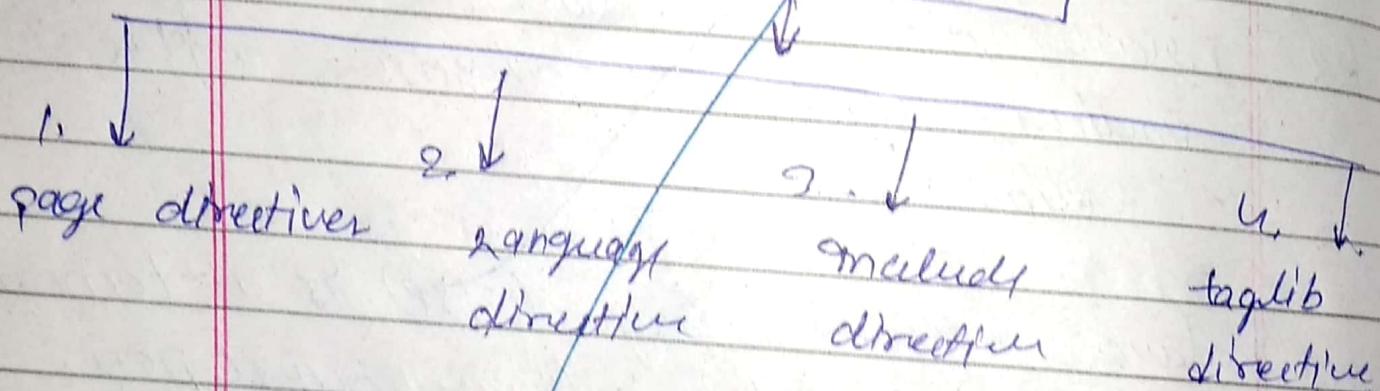
~~Ans.~~ Java server page (JSP) is a technology that helps software developer to create dynamically generated web pages based on HTML, XML or other document types.

~~Q4~~ JSP supports both scripting and element based dynamic content and allows developer to create their own tag libraries.

- JSP pages are compiled for efficient server processing.
- JSP is platform independent.
- * Directive control the processing of an entire JSP page. It gives direction to the servlet regarding processing of a page.

Type of JSP directive:

JSP directive



1. Page Directive: It provides communication between JSP engine, such as buffer or thread information of specify and error page.

2. Language Directive:

Language Directive specify script language & possible extension

3. Include directive:

Include directive an external document on the page that can often component information file or copyright file but can be JSP file.

4. Tag lib directive:

Indicates a library of custom tags that the page can make

Q. What is Java server page Technology?

A - Java server page (JSP) is a technology that helps software development to generate dynamically generated web page based on HTML, XML, or other document types.

- JSP supports both scriptlet and elements based a dynamic content and allow developer to create their own tag libraries.
- . JSP is platform independent so it can be easily upgraded or switched out without affecting JSP based application.
- . JSP tags are reusable so, the page runs faster.

Q15 compare servlet with CGI

Ans

Servlet

CGI

1. servlet are portable	CGI is not portable
2. In servlet each request is handled by light weight Java Thread	In CGI each request is handled heavy weight of process

3. Session can link directly to your club

In EJB data is not available links found to server.

4. In session Data sharing is possible

data sharing is not possible

5 Platform and application specific independent

platform dependent and portable.

Q. 6 What is EJB 2? Explain its types

An Enterprise Java Bean is a server side component which encapsulates business logic.

EJB (Enterprise Java bean) is used to develop scalable robust and secured enterprise application in Java.

To run EJB application we need an application server (EJB container), such as Tomcat, Glassfish, Weblogic, WebSphere etc.

Types of EJB.

(1) Session Bean: Session bean stores data of a particular user for single session. It can be stateful or stateless. session bean gets destroyed on user or session terminate.

(2) Entity Bean: It represents persistent data storage, any data can be saved to database via entity bean and later on can be retrieved from the database on an entity bean.

(3) Message driven beans: These are used in context of JMS. Message driven bean can consumes JMS messages from external entities and act accordingly.

Q7 What is JDBC? Explain the architecture of JDBC with the help of a diag. Q8

A7 JDBC API is a Java API that com

access any kind of tabular data, especially data stored in a Relational Database

- Making a connection to a database
- Creating SQL or MySQL statements
- Executing SQL or MySQL queries in one database

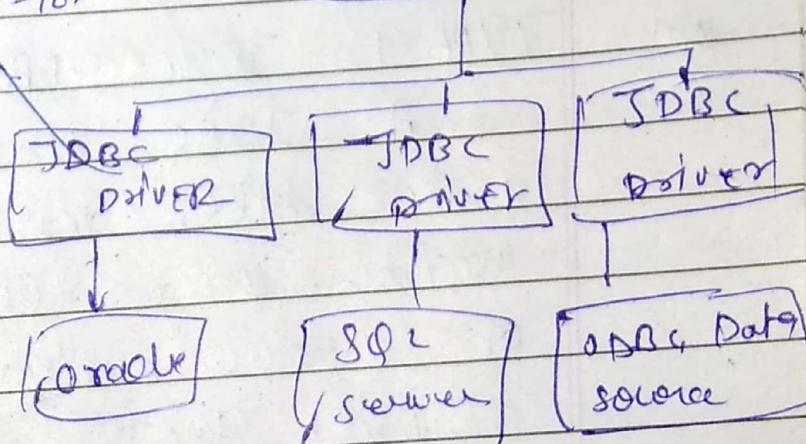
~~JDBC API~~ This provides an application to JDBC manager connection

~~JDBC Driver API~~
that supports JDBC manager-to-
Driver connection

Java Application

[JDBC API]

JDBC driver
manager



Q8 what are the various steps in JDBC to use a Database?

- Import JDBC package
- Load & register the JDBC driver
- Open a connection to the database
- Create a statement object to perform query
 - execute the statement object and return a query resultset
 - Process the resultset
 - close the resultset and statement objects
 - close the connection.

Q 9

Name 4 JDBC drivers

An

TYPE-1 JDBC-ODBC Bridge Driver
A JDBC bridge is used to access ODBC driver installed on each client machine. using ODBC, configure configuration on your system (Data source name (DSN)) that represent the target database.

TYPE-2 JDBC-Native API

JDBC API calls are converted into native C/C++ API calls which are unique to the database. These drivers are typically provided by the database vendors and used in the same manner as the JDBC - ODBC Bridge. The vendor-specific driver must be installed on each client machine.

Type 3 - JDBC - Net pure Java

A clean dies approach to access databases. The JDBC client uses standard network sockets to communicate with a middleware application server. The socket information is then transferred by the middleware app server onto the call performed requires by the DBMS and forwarded to the database server.

Type 4: 100% Pure Java

A pure Java - based driver communicates directly with the vendor's database through socket connection.

This is the highest performance driver available for the database and it is usually provided by the vendor itself.

Q 10

Ans
=

How JSP Pages are handled?
There are two ways of handling execution in JSP they are:

By error page and its error page attribute of page directive.

By <error-page> element in web.xml file.

→ Handling Exception using page Directive Attributes

→ errorPage is used to site which page to displayed when exception occurred.

→ Syntax: <%@ page errorPage="URL" of the error page %>

→ Is errorPage + used to make a page as an error-page when

exception are displayed

Syntax 1% $\left\{ \begin{array}{l} \text{@} \text{page} \rightarrow \text{Error page} \\ \text{true} \vee \text{?} \end{array} \right.$

Handling Exception using error-page Elements - In web.xml file:

It's a way of specifying the error page for each element but instead of using `<error-page>` directive for error page for each page can be specified in the `web.xml` file, using `<error-page>` element

Syntax $\left\{ \begin{array}{l} \text{web-app} \\ \text{@error-page} \end{array} \right.$

```
<error-page>
  <exception-type>Type of exception
  </exception-type>
  <location>Error page url</location>
</error-page>
</web-app>
```

Q4. Write short note on

(a) Tomcat Server

Tomcat is a web server. Its primary purpose is to act as a servlet container that serves Java web applications. It can process E. JSP. After which are classified. That process are GET, POST and other HTTP requests.

(b) COBRA is a imperative, high-level object oriented language with direct support for contracts, unit tests and compile time null tracking. It uses indentation to denote code structure.

