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Internal Assessment Test 1 – Sept. 2017

Sub:	Programming the Web					Sub Code:	10CS73	Branch:	CSE	
Date:	21-10-2017	Duration:	90 min's	Max Marks:	50	Sem / Sec:	7 - A		OBE	

	Answer any FIVE FULL Questions	MARKS	CO	RBT
1 (a)	What is hypertext? Explain HTTP phases. Mention various methods and status codes of HTTP.	[10]	CO1	L2
2 (a)	Explain web server operation and its general characteristics.	[05]	CO1	L2
(b)	Explain syntactic differences between HTML and XHTML.	[05]	CO1	L4
3 (a)	Explain all selector forms with example for each.	[06]	CO1	L2
(b)	Write an XHTML code to describe an ordered list of your five favorite movies. Each element of the list must have a nested list of at least two actors in your favorite movies.	[04]	CO2	L3
4 (a)	What are the widgets created with the <input> tag . Explain an example for each.	[05]	CO2	L2
(b)	List out the different image formats that support img tag and write XHTML document to illustrate use of <img> with all attributes.	[05]	CO2	L2
5 (a)	Explain the following, with an example for each. i) frames ii) background images iii) alignment of text iv) text decoration v) box model	[10]	CO2	L1
6 (a)	Create XHTML document that defines a table with five rows and five columns. The first row should contain country name, gold, silver, bronze(all three indicating the type of medals) and total in each column respectively. Fill in the information details in the table with appropriate values. After filling the details set red color to the background for the first row, blue for the second, yellow for the third, purple for the fourth and green for the fifth row. Use of align and valign attributes for this table has to be made at the appropriate places.	[06]	CO2	L3
(b)	Create an XHTML document that includes atleast two images and enough text to precede the images, flow around them (one on left and one on right) and continue after the last image (Note : Use CSS tags).	[04]	CO2	L3
7 (a)	Explain different levels of style sheets and its usage with syntax and example.	[06]	CO2	L2
(b)	Write a XHTML program to illustrate a form which accepts buyers name, Address, City, State, Zip, Product Name(book, Mobile, Pendrive) price, Quantity, Payment method(visa, master card, Discover, Check) submit button and clear form button.	[04]	CO2	L3
8 (a)	Explain URL and MIME with proper examples.	[05]	CO1	L2
(b)	How does domain name conversation happens in the web? Describe the concept with a suitable figure and an example.	[05]	CO1	L2

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IAT – 1 SOLUTION

1.a) What is hypertext? Explain HTTP phases. Mention various methods and status codes of HTTP.

HyperText Transfer Protocol:

The protocol used by ALL Web communications. It has a Request Phase with a Form: HTTP
method domain part of URL HTTP ver.
Header fields blank line
Message body

An example of the first line of a request: GET
/degrees.html HTTP/1.1

HTTP Methods:

GET - Fetch a document
POST - Execute the document, using the data in body
HEAD - Fetch just the header of the document
PUT - Store a new document on the server
DELETE - Remove a document from the server

HTTP Headers:

There are four categories of header fields: General, request, response and entity.

Common request fields: Accept: text/plain, Accept: text/*,
If-Modified_since: date

Common response fields: Content-length: 488, Content-type: text/html

- Can communicate with HTTP without a browser
- > telnet blanca.uccs.edu http GET
  /respond.html HTTP/1.1 Host:
  blanca.uccs.edu
  HTTP Response Form:
  Status line
  Response header fields blank line
  Response body

Status line format:
HTTP version status code explanation

Example: HTTP/1.1 200 OK (Current

version is 1.1)
Status code is a three-digit number; first digit specifies the general status

Status Code
1 => Informational
2 => Success
3 => Redirection
4 => Client error
5 => Server error

HTTP Response: Example
HTTP/1.1 200 OK
Date: Tues, 18 May 2004 16:45:13 GMT
Server: Apache (Red-Hat/Linux)
Last-modified: Tues, 18 May 2004 16:38:38 GMT
Accept-ranges: bytes
Content-length: 364
Connection: close
Content-type: text/html, charset=ISO-8859-1

2. a) Explain web server operation and its general characteristics.

Web Server:

- Provide responses to browser requests, either existing documents or dynamically built documents
- Browser-server connection is now maintained through more than one request-response cycle
- All communications between browsers and servers use Hypertext Transfer Protocol (HTTP)

Operation:

- Web servers run as background processes in the operating system.
  - Monitor a communications port on the host, accepting HTTP messages when they appear

Note: Default port is 80

- Web servers have two main directories:
  1. Document root (servable documents)
  2. Server root (server system software)
- Document root is accessed indirectly by clients
  - Its actual location is set by the server configuration file
  - Requests are mapped to the actual location
- Virtual document trees, Virtual hosts, Proxy servers
- Web servers now support other Internet protocols
- Apache (open source, fast, reliable)
  - Directives (operation control): ServerName
    ServerRoot ServerAdmin,
    DocumentRoot Alias
    Redirect DirectoryIndex
    UserDir
    Proxy Server

- The file structure of web server has 2 directives
- Document root and server root.
- The secondary areas from which documents can be served are called Virtual document trees.
- Secondary hosts are called virtual hosts.
- Some servers can serve documents that are in the document root of other machines called as PROXY SERVER.

2.b) Explain syntactic differences between HTML and XHTML

PARAMETERS	HTML	XHTML
Case Sensitivity	Tags and attributes names are case insensitive	Tags and attributes names must be in lowercase
Closing tags	Closing tags may be omitted	All elements must have closing tag
Quoted attribute values	Special characters are quoted. Numeric values are rarely quoted.	All attribute values must be quoted including numbers
Explicit attribute values	Some attribute values are implicit. For example: <table border>. A default value for border is assumed	All attribute values must be explicitly stated
***id* and *name* attributes**	Both *id* and *name* attributes are encouraged	Use of *id* is encouraged and use of *name* is discouraged
Element nesting	Rules against improper nesting of elements (for example: a form element cannot contain another form element) are not enforced.	All nesting rules are strictly enforced

3. a)Explain all selector forms with example for each.

Selector can have variety of forms like:

1. Simple selector form
2. Class selector
3. Generic selector
4. Id selector
5. Universal selector
6. Pseudo classes

Simple selector form

Simple selector form is a list of style rules, as in the content of a <style> tag for document-level style sheets. The selector is a tag name or a list of tag names, separated by commas. Consider the following examples, in which the property is font-size and the property value is a number of points :

```
h1, h3 { font-size: 24pt ;} h2 {
   font-size: 20pt ;}
```

Selectors can also specify that the style should apply only to elements in certain positions in the

document .This is done by listing the element hierarchy in the selector.

- Contextual selectors: Selectors can also specify that the style should apply only to elements in certain positions in the document .
- In the eg selector applies its style to the content of emphasis elements that are descendants of bold elements in the body of the document.

body b em {font-size: 24pt ;}

Also called as descendant selectors. It will not apply to emphasis element not descendant of bold face element.

Class Selectors

Used to allow different occurrences of the same tag to use different style specifications. A style class has a name, which is attached to the tag's name with a period.

p.narrow {*property-value list*} p.wide
{*property-value list*}

The class you want on a particular occurrence of a tag is specified with the class attribute of the tag.

For example,
* *
*Once upon a time there lived a king in the place called Ayodhya. *
...
* *
*Once upon a time there lived a king in the place called Ayodhya. *

Generic Selectors

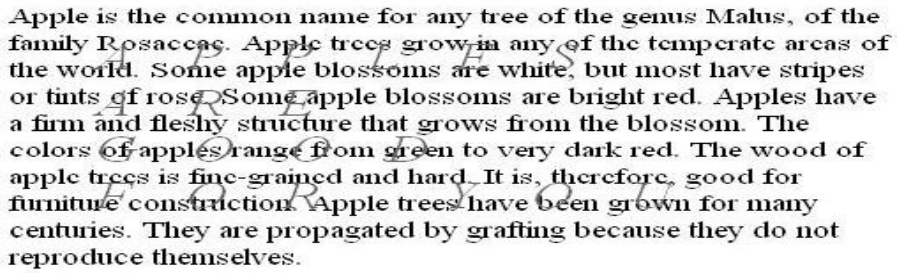
A generic class can be defined if you want a style to apply to more than one kind of tag.
A generic class must be named, and the name must begin with a period without a tag name in its name.
For Example:

.really-big { … }
Use it as if it were a normal style class
<h1 class = "really-big"> This Tuesday is a holiday </h1>...
 …

<html xmlns = "http://www.w3.org/1999/xhtml"> <head>
<title> Absolute positioning </title> <style
type = "text/css">
.regtext {font-family: Times; font-size: 14pt; width: 600px}
.abstext {position: absolute; top: 25px; left: 50px; font-family: Times; font-size: 24pt; font-style: italic; letter-spacing: 1em; color: rgb(102,102,102); width: 500px}
</style>
</head>
<body>

Apple is the common name for any tree of the genus Malus, of the family Rosaceae. Apple trees grow in any of the temperate areas of the world. Some apple blossoms are white, but most have stripes or tints of rose. Some apple blossoms are bright red. Apples have a firm and fleshy structure that grows from the blossom. The colors of apples range from green to very dark red. The wood of apple trees is fine-grained and hard. It is, therefore, good for furniture construction. Apple trees have been grown for many centuries. They are propagated by grafting because they do not reproduce themselves.

 APPLES ARE GOOD FOR YOU </body>
</html>



Id Selectors

An id selector allow the application of a style to one specific element. The general form of an id selector is as follows :

#specific-id {property-value list}

Example:

#section14 {font-size: 20} specifies a font size of 20 points to the element

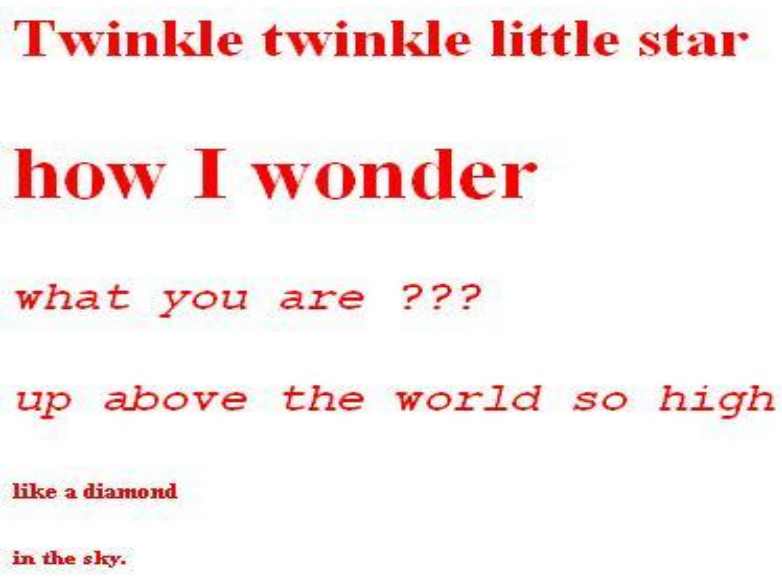
<h2 id =“section14”> Alice in wonderland</h2>

Universal selector

The universal selector, denoted by an asterisk(*), which applies style to all elements in the document. For example:

- **{color: red;}**

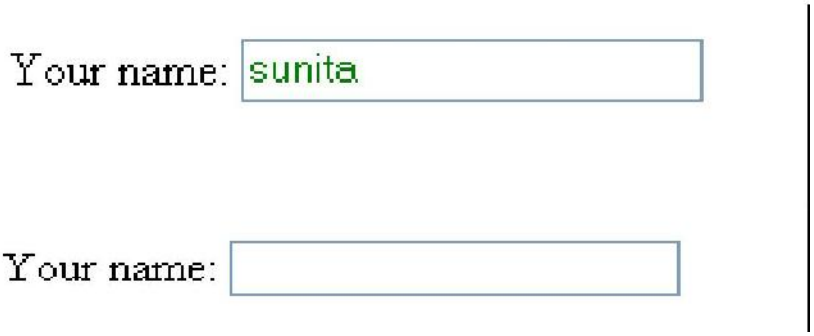
  makes all elements in the document red.



Pseudo Classes

Pseudo classes are styles that apply when something happens, rather than because the target element simply exists. Names of pseudo classes begin with colons hover classes apply when the mouse cursor is over the element focus classes apply when an element has focus i.e. the mouse
cursor is over the element and the left mouse button is clicked. These two pseudo classes are supported by FX2 but IE7 supports only hover.

```
<html xmlns = "http://www.w3.org/1999/xhtml"> <head>
 <title> Checkboxes </title>
  <style type = "text/css">
   input:hover {color: red;}
   input:focus {color: green;}
  </style> </head> <body> <form
  action = ""> <p>
     Your name:
     <input type = "text" /> </p>
   </form>
 </body>
</html>
```



3. b) Write an XHTML code to describe an ordered list of your five favorite movies. Each element of the list must have a nested list of at least two actors in your favorite movies.

```
<html>
        <head>
                <title>ordered list</title>
        </head>
        <body>
                <h1>Actors of favourite movies</h1>
```

```
        <ol>
            <li>steel</li>
                <ol>
                    <li>Henry Cavill</li>
                    <li>Amy Adams</li>
                </ol>
            <li>tangled</li>
                <ol>
                    <li>Mandy Moore</li>
                    <li>Zachary Levi</li>
                </ol>
            <li>x-men</li>
                <ol>
                    <li>patrick stewart</li>
                    <li>hugh jackman</li>
                </ol>
            <li>fast-2-furious</li>
                <ol>
                    <li>Paul Walker</li>
                    <li>Vin Diesel</li>
                </ol>
            <li>harry potter</li>
                <ol>
                    <li>Daniel Radcliffe</li>
                    <li>Emma Watson</li>
                </ol>
        </ol>
    </body>
</html>
```

Actors of favourite movies

1. steel
    1. Henry Cavill
    2. Amy Adams
2. tangled
    1. Mandy Moore
    2. Zachary Levi
3. x-men
    1. patrick stewart
    2. hugh jackman
4. fast-2-furious
    1. Paul Walkerl
    2. Vin Diesel
5. harry potter
    1. Daniel Radcliffe
    2. Emma Watson

4.a) What are the widgets created with the <input> tag . Explain an example for each.

- <input type="text" />
- <input type="password" />
- <input type="checkbox" name="c1" />
- <input type="radio" name="c2" />
- <select size=”3”><option>Visa</option><option>mastercard</option></select>
- <input type="submit" value="Submit Form" />
- <input type="reset" value="Clear Form" />
- <textarea rows="8" cols="20" placeholder="address here.."> </textarea>

4.b) List out the different image formats that support img tag and write XHTML document to illustrate use of <img> with all attributes.

3 types of image formats are supported by image tag. They are:

- JPG or JPEG(Joint Photographs Expert Group)
- GIF(Graphics Interchangable Format)
- PNG(Portable Network Graphics)

```
<img src="bg1.jpg" width="100px" height="100px" alt="no image available" />
```

The image tag attributes are

- Src = It’s the path of the image file
- Width = Width of the image in pixel
- Height = Height of the image in pixel
- Alt = Its an alert message displays when the file is not available in the specified path.

5. Explain the following, with an example for each.
i) frames ii) background images iii) alignment of text
iv) text decoration v) box model

i)frames

```
<frameset rows=50%,50%>
    <frame src="bg2.jpg" />
    <frame src="bg3.jpg" />
</frameset>
```

ii) **background images**

```
body{
        background-image:url(bg.jpg);
        }
```

iii) **alignment of text**

```
h1{
                    text-align:right;
            }
```

iv) **text decoration**

```
a{
                    text-decoration:none;
            }
```

v) **box model**

```
p{
                    border:dotted blue 20px;
                    margin-left:100px;

            }
```

6. a) Create XHTML document that defines a table with five rows and five columns. The first row should contain country name, gold, silver, bronze (all three indicating the type of medals) and total in each column respectively. Fill in the information details in the table with appropriate values. After filling the details set red color to the background for the first row, blue for the second, yellow for the third, purple for the fourth and green for the fifth row. Use of align and valign attributes for this table has to be made at the appropriate places.

```
<html>
        <head>
                <title>Table Creation</title>
        </head>
        <body>
                <table border="10px" cellpadding="20px">
                <caption>Medals</caption>
                        <tr bgcolor="red">
                                <th>Country name</th>
                                <th>Gold</th>
                                <th>Silver</th>
                                <th>Bronze</th>
                                <th>total</th>
                        </tr>
                        <tr valign="top" align="right" bgcolor="blue">
                                <td>India</td>
                                <td>25</td>
                                <td>30</td>
                                <td>15</td>
                                <td>70</td>
                        </tr>
                        <tr bgcolor="yellow">
                                <td>United States</td>
                                <td>20</td>
                                <td>33</td>
                                <td>12</td>
                                <td>65</td>
                        </tr>
```

```
                <tr bgcolor="purple">
                        <td>China</td>
                        <td>18</td>
                        <td>15</td>
                        <td>10</td>
                        <td>43</td>
                </tr>
                <tr bgcolor="green">
                        <td>Europe</td>
                        <td>15</td>
                        <td>10</td>
                        <td>8</td>
                        <td>33</td>
                </tr>
        </table>
    </body>
</html>
```

Medals

Country name	Gold	Silver	Bronze	total
India	25	30	15	70
United States	20	33	12	65
China	18	15	10	43
Europe	15	10	8	33

6. b)Create an XHTML document that includes atleast two images and enough text to precede the images, flow around them (one on left and one on right) and continue after the last image (Note : Use CSS tags).

```
html>
    <head>
        <title>Float image</title>
        <style type="text/css">
            #i1{
                float:left;
            }
            #i2{
                float:right;
            }
        </style>
```

```
</head>
<body>
	<img src="bg1.jpg" width="500px" height="500px" alt="no image available" id="i1"/>
	<img src="bg2.jpg" width="500px" height="500px" alt="no image available" id="i2"/>
	<p style="text-align:justify">
		Web design books in a store
```

1988—2001

Although web design has a fairly recent history, it can be linked to other areas such as graphic design. However, web design can also be seen from a technological standpoint. It has become a large part of people's everyday lives. It is hard to imagine the Internet without animated graphics, different styles of typography, background, and music.

The start of the web and web design

In 1989, whilst working at CERN Tim Berners-Lee proposed to create a global hypertext project, which later became known as the World Wide Web. During 1991 to 1993 the World Wide Web was born. Text-only pages could be viewed using a simple line-mode browser.[2] In 1993 Marc Andreessen and Eric Bina, created the Mosaic browser. At the time there were multiple browsers, however the majority of them were Unix-based and naturally text heavy. There had been no integrated approach to graphic design elements such as images or sounds. The Mosaic browser broke this mould.[3] The W3C was created in October 1994 to "lead the World Wide Web to its full potential by developing common protocols that promote its evolution and ensure its interoperability."[4] This discouraged any one company from monopolizing a propriety browser and programming language, which could have altered the effect of the World Wide Web as a whole. The W3C continues to set standards, which can today be seen with JavaScript. In 1994 Andreessen formed Communications Corp. that later became known as Netscape Communications, the Netscape 0.9 browser. Netscape created its own HTML tags without regard to the traditional standards process. For example, Netscape 1.1 included tags for changing background colours and formatting text with tables on web pages. Throughout 1996 to 1999 the browser wars began, as Microsoft and Netscape fought for ultimate browser dominance. During this time there were many new technologies in the field, notably Cascading Style Sheets, JavaScript, and Dynamic HTML. On the whole, the browser competition did lead to many positive creations and helped web design evolve at a rapid pace.[5]

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

Web design books in a store 1988—2001
Although web design has a fairly recent history, it can be linked to other areas such as graphic design. However, web design can also be seen from a technological standpoint. It has become a large part of people's everyday lives. It is hard to imagine the Internet without animated graphics, different styles of typography, background, and music. The start of the web and web design In 1989, whilst working at CERN Tim Berners-Lee proposed to create a global hypertext project, which later became known as the World Wide Web. During 1991 to 1993 the World Wide Web was born. Text only pages could be viewed using a simple line mode browser.[2] In 1993 Marc Andreessen and Eric Bina, created the Mosaic browser. At the time there were multiple browsers, however the majority of them were Unix-based and naturally text heavy. There had been no integrated approach to graphic design elements such as images or sounds. The Mosaic browser broke this mould.[3] The W3C was created in October 1994 to "lead the World Wide Web to its full potential by developing common protocols that promote its evolution and ensure its interoperability"[4] This discouraged any one company from monopolizing a propriety browser and programming language, which could have altered the effect of the World Wide Web as a whole. The W3C continues to set standards, which can today be seen with JavaScript. In 1994 Andreessen formed Communications Corp. that later became known as Netscape Communications, the Netscape 0.9 browser. Netscape created its own HTML tags without regard to the traditional standards process. For example, Netscape 1.1 included tags for changing background colours and formatting text with tables on web pages. Throughout 1996 to 1999 the browser wars began, as Microsoft and Netscape fought for ultimate browser dominance. During this time there were many new technologies in the field, notably Cascading Style Sheets, JavaScript, and Dynamic HTML. On the whole, the browser competition did lead to many positive creations and helped web design evolve at a rapid pace.[5] Evolution of web design In 1996, Microsoft released its first competitive browser, which was complete with its own features and tags. It was also the first browser to support style sheets, which at the time was seen as an obscure authoring technique.[5] The HTML markup for tables was originally intended for displaying tabular data. However designers quickly realized the potential of using HTML tables for creating the complex, multi column layouts that were otherwise not possible. At this time, as design and good aesthetics seemed to take precedence over good mark up

7.a) Explain different levels of style sheets and its usage with syntax and example.

There are three levels of style sheets, in order from lowest level to highest level, are inline, document level, and external. Inline style sheets are specified for a specific occurrence of a tag and apply only to the content of that tag. This application of style, which defeats the purpose of style sheets – that of imposing uniform style on the tags of at least one whole document. Another disadvantage of inline style sheets is that they result in style information, which is expressed in a expressed in a language distinct from XHTML markup, being embedded in various places in documents.

Document-level style specifications appear in the document head section and apply to the whole body of the document. External style sheets are not part of the documents to which they apply. They are stored separately and are referenced in all documents that use them. They are written as text files with MIME type text/css.

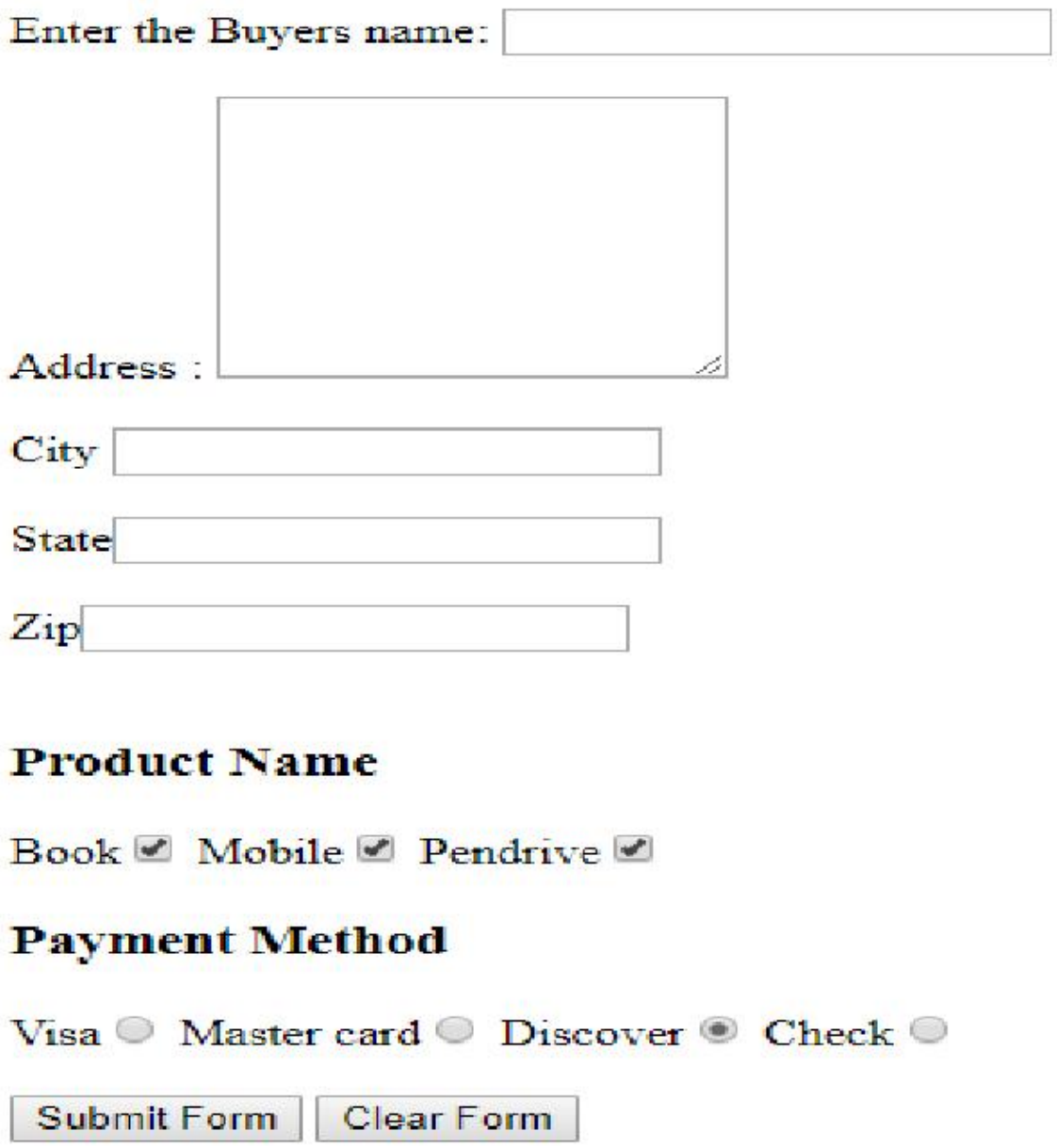
7. b) Write a XHTML program to illustrate a form which accepts buyers name, Address, City, State, Zip, Product Name(book, Mobile, Pendrive) price, Quantity, Payment method(visa, master card, Discover, Check) submit button and clear form button.

```
<html>
        <head>
                <title>Form Design</title>
        </head>
        <body>
                <form action="" method="">
                        <label>
```

```
        Enter the Buyers name:
        <input type="text" />
</label>
<br />
<br />
<label>
        Address : <textarea rows="8" cols="20" placeholder="address here..">
        </textarea>
</label>
<br />
<br />
<label>
        City <input type="text" />
</label>
<br />
<br />
<label>
        State<input type="text" />
</label>
<br />
<br />
<label>
        Zip<input type="text" />
</label>
<br />
<br />
<h3>Product Name</h3>
<label>
        Book<input type="checkbox" name="c1" />
</label>
<label>
        Mobile<input type="checkbox" name="c1" />
</label>
<label>
        Pendrive<input type="checkbox" name="c1" />
</label>
<br />
<h3>Payment Method</h3>
<label>
        Visa<input type="radio" name="c2" />
</label>
<label>
        Master card<input type="radio" name="c2" />
</label>
<label>
        Discover<input type="radio" name="c2" />
</label>
<label>
        Check<input type="radio" name="c2" />
</label>
<br />
<br />
```

```
                    <input type="submit" value="Submit Form" />
                    <input type="reset" value="Clear Form" />

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



8. a) Explain URL and MIME with proper examples

URL

- General form:
  - scheme:object-address
  - The scheme is often a communications protocol, such as telnet or ftp
- For the http protocol, the object-address is:
- fully qualified domain name/doc path
- For the file protocol, only the doc path is needed

- Host name may include a port number, as in zeppo:80 (80 is the default)
- URLs cannot include spaces or any of a collection of other special characters (semicolons, colons, ...)
- The doc path may be abbreviated as a partial path
    - The rest is furnished by the server configuration
- If the doc path ends with a slash, it means it is a directory

Multipurpose Internet Mail Extensions (MIME)

- Originally developed for email
- Used to specify to the browser the form of a file returned by the server (attached by the server to the beginning of the document)
- Type specifications
    - Form:
        - type/subtype
    - Examples: text/plain, text/html, image/gif,image/jpeg

- MIME was developed to allow different kinds of documents to be sent using internet mail.
- Server gets type from the requested file name's suffix (.html implies text/html)
- Browser gets the type explicitly from the server.
- Type/subtype. A list of MIME specifications is stored in the configuration files of every web server.

8. b) How does domain name conversation happens in the web? Describe the concept with a suitable figure and an example.

The IP addresses are numbers. Hence, it would be difficult for the users to remember IP address. To solve this problem, text based names were introduced. These are technically known as domain name system (DNS).
These names begin with the names of the host machine, followed by progressively larger enclosing collection of machines, called domains. There may be two, three or more domain names.
DNS is of the form hostname.domainName.domainName . Example: rnsit.ac.in
The steps for conversion from DNS to IP:
The DNS has to be converted to IP address before destination is reached.

This conversion is needed because computer understands only numbers.

The conversion is done with the help of name server.

As soon as domain name is provided, it will be sent across the internet to contact name servers.

This name server is responsible for converting domain name to IP

If one of the name servers is not able to convert DNS to IP, it contacts other name server.

This process continues until IP address is generated.

Once the IP address is generated, the host can be accessed.

The hostname and all domain names form what is known as FULLY QUALIFIED DOMAIN NAME. This is as shown below: