



University of Engineering & Management, Kolkata

2<sup>nd</sup> Term Examination, November, 2019

Course: B.Tech (CSE)

Semester: 7<sup>th</sup>

Paper Name: Internet Technology

Paper Code: CS705D

Full Marks: 70

Time: 3 hours

Group-A (10 marks)

Answer any 5. Each question is of 2 marks.

1. A) What is the difference between HTML and DHTML?  
B) What is the difference between Network and Internet?  
C) What is the relationship between internet and world wide web?  
D) What is JavaScript? Why is it mostly used in web browser?  
E) What is Perl?  
F) What is the use of href attribute in html?  
G) Why XML is superior to HTML?  
H) What is Date object in JavaScript?

Group-B (15 marks)

Answer any 3. Each question is of 5 marks.

2. What is CSS? Why is it needed? Describe different types of CSS with example.
3. Write an html program to create one web page to display your biodata with the following information: name, DOB, address, father's name, mother's name, phone number, email. Display all of them on left side of the page and your passport size image to be displayed on the right side of the page.
4. What is an HTML element? Write a small html code to display elements showing heading, body and paragraph.
5. What is iFrame? How to specify the size of the iFrame? Describe with an example.
6. Design an arithmetic calculator using JavaScript and html.
7. Explain the difference between "==" and "==="? What are all the types of Pop up boxes available in JavaScript? What is the use of Void(0)?

**Group-C (45 marks)**

**Answer any 3. Each question is of 15 marks.**

8. Write an html program to create one web page to display the following:
- A) Text field to enter Name, Phone No, Email ID, Registration No.
  - B) Radio button to enter gender (Male/Female), check boxes for hobbies like playing, travelling, reading books etc.
  - C) 2 drop down list for stream like B.Tech, M. Tech, MCA and for branch like CSE, ECE, ME, CIVIL etc.
  - D) Text area to enter address.
  - E) Html table to display your degree from Class X till last semester showing degree name, year of passing, grade/percentage in a tabular format. 5 X
9. Write short notes on any three of the following:
- A) XML
  - B) HTML Color
  - C) HTML Forms
  - D) HTML Layout
  - E) Scripting Language. 3 X
10. A) Explain about Perl Programming Language briefly.  
B) Explain Low Level Language Vs High Level Programming Language. 8+
11. A) What is IP datagram ? Draw and explain the IPV4 datagram format.  
B) A block of address is granted to a small organization. One of the address 205.16.37.39/28. Find the first and last address in the block. (3+6)+
12. Write JavaScript for the following. Provide a text box for the user enter user name. Validate the username for the no. of characters (assume some no. say 6). Provide a SUBMIT button for the validation to happen. On successful validation display a new page with an image and two text boxes for entering the width and height of the image respectively with a RESIZE button below. On clicking the Resize button validate the width and height numbers and on successful validation display the image with the requested width and height.
13. What is the purpose of a public key infrastructure? Why is there a risk for "who is using n key?" Define protection state. 1

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# Internet Technology

group - A

1 A)

HTML

DHTML

It is a markup language.

HTML creates static web pages.

DHTML creates dynamic ~~web pages~~ <sup>is a collection of technologies</sup>

DHTML creates dynamic web pages.

B)

Networks

consist of pc that are not physically connected and may be used as a private computer yet shares data with one another.

Internet could be a technology that links these little ~~things~~ and huge networks with one another.

C)

Internet is a collection of connected computers through gateway by which the info. stored in databases is transferred from 1 computer to another. WWW is a software that is used to retrieve the information requested by the users.

D)

JavaScript is a dynamic computer programming language.

It is mostly used in web browsers because it is lightweight and allows client side script to interact with the user.

E)

Perl is a family of script programming language that are similar in syntax to C language. Perl is an open source, general use, interpreted language.

E) href attribute is used to specify the URL of the page that the hyperlink points to. It is used to specify a link to any address.

G) XML is better than HTML because :-  
i) XML is dynamic whereas HTML is static.  
ii) XML preserves white spaces whereas HTML does not.

H) Date Object is an inbuilt datatype of JavaScript language. It is used to work with date and time.

### Group - B

2. CSS stands for Cascading Style Statement. It is a style sheet language used to describe the look and formatting of a document, written in markup language.

CSS is needed to ~~save~~ solve big problems in a much less amount of time as we can completely change the look of a website with a few changes in CSS code.

Types of CSS :-

1) Inline CSS

2) Internal CSS

3) External CSS



48. Write an html program to create one web page to display your biodata with the following information: name, DOB, address, father's name, mother's name, phone number, email id. Display all of them on left side of the page and your passport size image to be displayed on the right side of the page.

Ans. *<sample code will appear like this>*

`<!DOCTYPE html>`

```
<html>
<body>
<h2>HTML Forms</h2>
<form action="/action_page.php">
  First name:<br>
<input type="text" name="firstname" value="Mickey">
<br>
  Last name:<br>
<input type="text" name="lastname" value="Mouse"><br><br>
<input type="radio" name="gender" value="male" checked> Male<br>
<input type="radio" name="gender" value="female"> Female<br>
<input type="radio" name="gender" value="other">Other
<br><br>
<input type="submit" value="Submit">
</form>
<p>If you click the "Submit" button, the form-data will be sent to a page called
"/action_page.php".</p>
</body>
</html>
```

4. An HTML element is an individual component of an HTML document or web page. It starts with a defined by a starting tag and ends with a closing tag.

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title> Midsem soln </title>
```

```
</head>
```

```
<body>
```

```
<p> This is paragraph </p>
```

```
</body>
```

```
</html>
```

5. An IFrame is an HTML document embedded inside another HTML document on a website. It is used to insert content from another source.

Example —

specifying size of iframe :-

```
<iframe src = "/default.asp"
width = "200" height = "200"></iframe>
```

6. calculator using Javascript and HTML :-

```
<html>
```

```
<head>
```

```
<script>
```

```
function dis(val)
{
```

```
document.getElementById("result").value += val
}
```

```
function solve()
{
```

```
let x = document.getElementById("result").value
```

```
let y = eval(x)
```

```
document.getElementById("result").value = y
```



```

}
function clr()
{
document.getElementById("result").value = ""
}
</script>
</head>

```

```

<body>
<div class = title> calculator </div>
<table border = 1>
<tr>
<td colspan = "3"><input type = "text" id = "result">
<td><input type = "button" value = "C" onclick = "clr()">
</tr>
<tr>
<td><input type = "button" value = "1" onclick = "dis('1')">
"2" "2"
"3" "3"
"/" "/"
</tr>
<tr>
<td><input type = "button" value = "4" onclick = "dis('4')">
"5"
"6"
"_"
</tr>
<tr>
<td><input type = "button" value = "7"
"8"
"9"
"0"
"="
"<input type = "button" value = "="
</tr>
</table>
</body>
</html>

```

Output:

At first-

GeeksforGeeks Calculator			
<input type="text"/>			C
1	2	3	/
4	5	6	-
7	8	9	+
.	0	=	*



7

== is used for comparison between 2 variables irrespective of their datatypes.

=== is used to compare two variables but will check ~~strict~~ type the datatypes and compare the values.

Types of pop up boxes —

- a) Alert Box
- b) confirm Box
- c) Prompt Box.

void(0) means author of HTML is misusing the anchor element in place of button element.

31. Write an html program to create one web page to display the following:
- Text field to enter Name, Phone No, Email ID, Registration No.
  - Radio button to enter gender (Male/Female), check boxes for hobbies like playing, travelling, reading books etc.
  - 2 drop down list for stream like B.Tech, M. Tech, MCA and for branch like CSE, ECE, ME, CIVIL etc.
  - Text area to enter address.
  - Html table to display your degree from Class X till last semester showing degree name, year of passing, grade/percentage in a tabular format.

---

---

Ans. (sample code)

```
<!DOCTYPE html>
<html>
<body>
<h2>HTML Forms</h2>
<form action="/action_page.php">
  First name:<br>
  <input type="text" name="firstname" value="Mickey">
<br>
  Last name:<br>
  <input type="text" name="lastname" value="Mouse"><br><br>
  <input type="radio" name="gender" value="male" checked> Male<br>
  <input type="radio" name="gender" value="female"> Female<br>
  <input type="radio" name="gender" value="other">Other
<br><br>
  <input type="submit" value="Submit">
</form>
<p>If you click the "Submit" button, the form-data will be sent to a page called
"/action_page.php".</p>
</body>
</html>
```

(for drop down)

```
<!DOCTYPE html>
<html>
<body>
<select>
<option value="volvo">Volvo</option>
<option value="saab">Saab</option>
<option value="opel">Opel</option>
<option value="audi">Audi</option>
</select>
</body>
</html>
```

(for table)

```
<!DOCTYPE html>
<html>
<head>
<style>
table, th, td {
border: 1px solid black;
}
</style>
</head>
```



```
<body>
```

```
<h2>Bordered Table</h2>
```

```
<p>Use the CSS border property to add a border to the table.</p>
```

```
<table style="width:100%">
```

```
<tr>
```

```
<th>Firstname</th>
```

```
<th>Lastname</th>
```

```
<th>Age</th>
```

```
</tr>
```

```
<tr>
```

```
<td>Jill</td>
```

```
<td>Smith</td>
```

```
<td>50</td>
```

```
</tr>
```

```
<tr>
```

```
<td>Eve</td>
```

```
<td>Jackson</td>
```

```
<td>94</td>
```

```
</tr>
```

```
<tr>
```

```
<td>John</td>
```

```
<td>Doe</td>
```

```
<td>80</td>
```

```
</tr>
```

```
</table>
```

```
</body>
```

```
</html>
```

## Group - C

⑨ XML — Extensible Markup Language (XML) defines a set of rules for encoding documents in a format that is both human readable and machine readable. XML language has no predefined tags. The tags are invented by the authors of the XML document. XML simplifies data sharing and hence is preferred over HTML.

HTML colours — HTML colours are specified using predefined colour names or using their RGB or HEX value. The colour names in HTML are —  
'Tomato', 'Orange', 'Gray',  
'Violet', 'LightGray' ... etc.  
HTML supports 140 standard color name

HTML forms — These allow users to enter data sent from the server for processing.  
Forms can resemble database because web users fill these forms using checkbox, radio button or text-field.

HTML layout provides a way to arrange web pages in well structured and responsive form. Layout works with arrangement of visual elements of an HTML doc.

A scripting language is a computer language with a series of commands within a file that is capable of being executed without being compiled.  
Eg of scripting language — Perl, PHP, Python.



10

PERL (Practical Extraction And Reporting Language) is a high level, interpreted and dynamic programming language. It supports both procedural and object oriented programming. Perl is quite similar to C in terms of syntax. Perl can be embedded in web ~~monitors~~ servers to increase its processing power, and has the DBI package which makes web-database integration very easy.

→ Perl supports cross platform and is compatible with Markup languages like HTML, XML, etc.

→ It is efficient in text manipulation.

Low Level  
Language

High Level  
Language

1. Machine Friendly Language.

Programmer Friendly Language.

2. Memory Efficient

Not memory efficient

3. Tough to understand

Easy to understand.

4. Complex to debug.

Can be debugged easily.

5. Machine dependant

Machine Independent

6. Needs assembler for translation

Needs compiler or interpreter for translation.



11 A) IP datagram — Datagram is a combination of words, data and telegram. It is a msg containing data that is to be sent from one location to another. IP datagram defines how information is sent between systems over internet.

IPv4 — It is a 32 bit numeric address written as 4 numbers separated by periods.

For eg — 66 . 94 . 234 . 13

↓  
Octet

The numbers range may vary from 0-255. This produces  $4 \times 254 \times 256 \times 256$  unique addresses. Each octet is transformed to a 8 bit binary no.

66 . 94 . 29 . 13

01000010 . 01011110 . 00011101 . 00001101

B) 205 . 16 . 37 . 39 / 28

11001101 00010000 00100101 00100111

First address  $\rightarrow (32 - 28) = 4$

$\rightarrow$  11001101 00010000 00100101 00100000

$\rightarrow$  205 . 16 . 37 . 32 (first address)

Last address  $\rightarrow$  11001101 00010000 00100101 00101111

$\rightarrow$  205 . 16 . 37 . 47 (last address)



**18. Write JavaScript for the following. Provide a text box for the user enter user name. Validate the username for the no. of characters (assume some no. say 6). Provide a SUBMIT button for the validation to happen. On successful validation display a new page with an image and two text boxes for entering the width and height of the image respectively with a RESIZE button below. On clicking the Resize button validate the width and height numbers and on successful validation display the image with the requested width and height.**

**(15)**

First page refer to question no. 15.

Second Page:

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

Width:

```
<input type="text" id="width"><br><br>
```

Height:

```
<input type="text" id="height"><br><br>
```

---

---

```
<br><br>
```

```
<br>
```

```
<button onclick="myFunction()">Resize</button>
```

```
<script>
```

```
function myFunction() {
```

```
    var myImg = document.getElementById("gl");
```

```
    var x = document.getElementById("width").value;
```

```
    var y = document.getElementById("height").value;
```

```
    myImg.width=x;
```

```
    myImg.height=y;
```

```
}
```

```
</script>
```

```
</body>
```

```
</html>
```

15. a) With an example describe java scripts Control structure.

b) Design a web page with a text box (username) where the user can enter a name and

Another text box (ID) where the user enter an only four digit ID.NO and a button "validate". Validate the entered username and ID field for the following using java script.

- Both the fields should not be empty
- Name field should have alphabets
- ID field should have numeric.

(7+8)

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<form action="/action_pid.php" onsubmit="return myFunction()">
```

```
  UserName (characters only): <input type="text" id="uname" size="20"
name="uname"><br><br>
```

```
  Id (4 digit numeric value): <input type="text" id="id" size="20"
name="id"><br><br>
```

```
<input type="submit" value="Submit">
```

```
</form>
```

```
<script>
```

```
function myFunction() {
```

```
  var id = document.getElementById("id").value;
```

```
  var uname = document.getElementById("uname").value;
```

```
  submitOK = "true";
```

```
  if (uname.length <= 0 || id.length <= 0) {
```

```
    alert("The name and id can not be empty");
```

```
        submitOK = "false";
    }
else
{
var letters = /^[A-Za-z]+$/;
    if(!uname.match(letters))
    {
        alert('Please input alphabet characters only in username');
        return false;
    }
}
```

```
if (isNaN(id)) {
    alert("The id contain numeric value only!!");
    submitOK = "false";
}
else{
    if (id.length != 4 ) {
        alert("The id contain 4 digits only !!");
        submitOK = "false";
    }
}
```

```
if (submitOK == "false") {
    return false;
}
}
</script>
```

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





13 - Public key Infrastructure provides assurance of public key. It provides the identification of public keys and their distribution. (PKI) is used to manage the creation, distribution, identification and revocation of public keys. It consists of a set of roles, policies, procedures, hardware and software.

Risk of "who is using is using my key" arises as ~~there is~~ a third party <sup>CA user</sup> ~~negligence~~ authority to perform the necessary checks on the person or company requesting the certificate to confirm their identity. The RA may appear to the client as CA, but do not actually sign the certificate.

Protection state → while the public key of a client is stored on the certificate, the associated private key can be stored on the key owner's computer. But this is not done. In case an attacker gains access to the computer he will easily get the private key. For this a private key is stored on secure removable storage token which is protected with a password. This is called Protection state.