



Higher National Diploma in Information Technology

Second Year, Second Semester Examination – 2018

HNDIT2413 – Web Application Development

Model Answers

Instructions for Markers: *These are model answers, you may accept the any correct answers specially for the coding. But do not deviate the instructions given in the questions.*

Pages-14

Q1.

- i. What is meant by Web Application? [03 Marks]
Any application that uses Web Technologies including web browsers, web servers and Internet protocols is called Web Application
- ii. Write down two (02) differences between static and dynamic web pages.

- Static web pages do not change the content or layout depending on user input. In contrast, dynamic web pages adapt their content depending on user input or computing environment (user, time or data).
- The static web page is simple to construct while dynamic web pages are complex to construct and design.
- Static web page involves technology such as HTML, JavaScript, CSS, etcetera for its construction. On the contrary, dynamic web pages are created using CGI (Common Gateway Interface) and languages like AJAX, ASP, PERL, PHP, etcetera server-side scripting languages.
- The static web pages display the same content each time when someone visits it, whereas in dynamic web pages the page content changes according to the user.
- Basic HTML pages can be loaded quickly by consuming less time, that's why the static web pages load in less time. Conversely, the dynamic web pages take more time while loading.
- A database is used in at the server end in a dynamic web page. In contrast, there is no database used in a static web page. **(For any two points: 04 Marks)**

- iii. Write the output of the following HTML code.

```
<table border="1" width="30%">
  <caption><b>KNOWLEDGE POOL</b></caption>
```

```

<tr>
  <th colspan="2" align="center">Innovative Project</th>
</tr>
<tr>
  <th>Title</th>
  <td>Home based Dengue Monitoring System</td>
</tr>
<tr>
  <th>Developer</th>
  <td>KSNTG Experts Pvt.Ltd</td>
</tr>
<tr>
  <th rowspan="2">Contact Number</th>
  <td>021 226 3245</td>
</tr>
<tr>
  <td>071 5643443</td>
</tr>
</table>

```

KNOWLEDGE POOL	
Innovative Project	
Title	Home based Dengue Monitoring System
Developer	KSNTG Experts Pvt.Ltd
Contact Number	021 226 3245
	071 5643443

For caption: 1 Mark

Border : 1 Mark

table headings : 1 Mark

data : 1 Mark

rowspan : 1 Mark

iv. Write HTML code to create the following output.

Hint: You can use the table for the vertical arrangement.

Join IEEE-2019

Full Name :

Address :

Membership Type: Professional Member ☐

Student Member ☐

☒ I accept the terms and conditions

Use proper names for the textbox, radio button, checkbox and button (08 Marks)

3

Q2.

- i. Why do we use Style Sheets for our web page and write three reasons.
- It allows much greater degree of layout and display control.
 - The amount of format coding necessary to control display characteristics can be greatly reduced.
 - It allows multiple styles to be attached to a document at once.
 - It also allows for all the style formatting in a document to be changed at once, thus a document can be easily formatted for different purposes (online, brochures, printing, etc.).
- (Three of the above-03 Marks)**

- ii. Mention three ways to insert styles into your webpage and explain one of them.
- External style sheets,- i.e. a separate CSS-file referenced from the document
 - Embedded style (internal)-blocks of CSS information inside the HTML document itself
 - Inline style,-attaches a style definition within the HTML element it is modifying
- (3+1 for explain=04 Marks)**

- iii. Write down the complete HTML code to include the following external css file and all the styles apply to the relevant HTML elements.

```
mystyle.css
h1, h2 {
    color: red;
}
p.mypara {
    color: blue;
    text-align: center;
}
#border {
    border-bottom-width: thick;
    border-bottom-style: double;
    border-bottom-color: green;
```

Instructions:

- Your page should contain the following HTML Elements: headings, paragraph and image
- Image(sweng.jpg) has a green color bottom double line thick border and 25% of width and height

Answer

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css"/> (1 Mark)
</head>
<body>
<h1>HNDIT</h1> (1 Mark)
<h2>Developer Track</h2> (1 Mark)
 (1 Mark)
<p class="mypara">Software development is the.....</p> (1 Mark)
</body>
</html>
```

- iv. Complete the following html page by filling the blanks based on the given instructions. [08 Marks]

```
<html>
<head>
<1>.....="text/css">
body{
    2).....; //insert background picture banner.png
}
.para{
    3).....//set font type arial
    4).....; //set the font size 14px
    5).....//set the italic font style
}
th{
    6).....//set the heading background color green
    color:white;
    7).....; //set the underline
}
</style>
</head>
<body>
<p 8>.....>HIGHER NATIONAL DIPLOMA IN ENGINEERING -
(HNDE)</p>
<table border="1">
    <tr>
        <th colspan="2" align="center">SLIATE</th>
    </tr>
    <tr>
        <th>HNDE</th>
        <td>ATI GALLE</td>
    </tr>
```

```

<tr>
    <th>HNDE</th>
    <td>ATI COLOMBO</td>
</tr>
<tr>
    <th>HNDE</th>
    <td>ATI JAFFNA</td>
</tr></table> </body></html>

```

- 1) style type
- 2) background-image:url('banner.png')
- 3) font-family:Arial;
- 4) font-size:14px
- 5) font-style: italic;
- 6) background-color:green;
- 7) text-decoration:underline
- 8) class="para"

(01*8=8

Marks)

(Total 20

Marks)

Q3.

- i. Mention two ways to include the JavaScript into a HTML document.

- a. Enclosing the script within script (<script>) tags

```

<script language="JavaScript" type="text/JavaScript">
//Script code here
</script>

```

- b. Use an external script file

```

<script language="JavaScript" src="simple.js" type="text/javascript">
</script>

```

(2*1.5=03 Marks)

- ii. What do you mean by HTML DOM?

Allowing programming language access to the structure of a web document.

Using the DOM interface, all HTML elements, along with their containing text and attributes, can be accessed for modification, deletion or to add new elements.

The HTML DOM is platform and language independent.

(03 Marks)

- iii. Write JavaScript functions to the following form.

Finding factorial value

Enter number

Result

1

2

No	Element	Attribute Values(Name or Id)
1	Text Box	num
2	Text Box	result

- a.) When you click the “Fac” button to find the factorial value of the entered number, the result should be displayed in the relevant text box.

(note: form is mention by the f1)

function calculate()

```

{
var num=f1.num.value;
var fac=1;
while (num>=1)
{
fac= fac*num;
num --;
}
f1.result.value=fac;
}

```

(Any correct answer give 4 Marks)

- b.) When you click the “clear” button ,all the text boxes should be cleared.

```

function clearform()
{
f1.num.value=" ";
f1.result.value=" ";
}

```

[02

Marks]

- iv. Consider the below HTML Code and write JavaScript function(validation()) to validate the index number field and display alert messages to the user according to the given instructions.

(Total 20 Marks)

Q4.

- i. Define the Server-side scripting and write two server-side web technologies.
 - Server-side scripting is a web server technology in which a user's request is fulfilled by running a script directly on the Web server to generate dynamic HTML pages.
 - Server-side scripting enables the ability to highly customize the response based on the user's requirements, access rights, or queries into data stores.

(One of the above-02 Marks)

Server-side Technologies

- **PHP**
- **ASP**
- **JSP (Java Server Pages)**
- **Java Servlets**
- **C++/Java**
- **PERL**
- **XML**

(Two of the above-02 Marks)

- ii. In order to develop and run PHP web pages, what are the three components needed to be installed on the computer system?
 - Web server
 - Database
 - PHP parser
- iii. Write the output of the following PHP codes.

(01*3=03 Marks)

a. `<?php`

```
define("index",25);
```

```
echo index++;
```

```
?>
```

b. `<?php`

```
$t = 8;
```

```
$t++;
```

```
echo "Answer 1: ",$t--,"<br>";
```

```
$n = 5;
```

```
++$n;
```

```
echo "Answer 2: ",$n,"<br>";
```

```

$t += 2;
$n -= 2;
$final = $t.$n;
echo "Answer 3: ",$final;
?>

```

Answer

- c. Error (index is constant. Can't update the value once you defined) (02 Marks)
- d.

Answer 1: 9
 Answer 2: 6
 Answer 3: 104

(3*1=03 Marks)

- iv. Write a php code segment to print the triangular number of 1 to 10 (sequence) in tabular form using for loop.

Table headings: Sequence/Number (n) and Triangular Number
Finding triangular number using the equation $T(n) = n*(n+1)/2$

Answer

```

<?php
echo "<table>";
echo "<tr>";
    echo "<th>","Sequence/Number","</th>";
    echo "<th>","Triangular Number","</th>";
    echo "</tr>";
    for ($i=1;$i<11;$i++)
    {
        $j=$i*($i+1)/2;
        echo "<tr>";
        echo "<td>",$i,"</td>";
        echo "<td>",$j,"</td>";
        echo "</tr>";
    }

```

(1 Mark)

(1 Mark)

(2 Marks)

(2 Marks)

(1 Mark)

(1 Mark)

```
echo "</table>";
```

```
?>
```

(Total 20 Marks)

Q5.

- i. Define the term “session” and how inform to the server that session are going to be used in PHP.

- **A session is a combination of a server-side file containing all the data you wish to store, and a client-side cookie containing a reference to the server data.** (definition 2 Marks)

-

```
<?php  
session_start() ;  
?>
```

(Function 1 Mark)

- ii. PHP is Object Oriented language. Define a class called ” MyWorld” and create an instance of this class in PHP.

```
<?php  
  
class MyWorld{ (2 Marks)  
  
    // class definition goes here  
  
}  
  
$obj=new MyWorld(); (2 Marks)  
  
?>
```

- iii. An associative array, each ID key is associated with a value. Define an associative array to hold the details- name ,Address,TP and Email of a student and print those values with the relevant keys?

```
<?php  
  
$student =array( "name"=>"jeewanie", "Address"=>"Lotus  
Lane,Colombo", "TP"=>"94-77-8280958",  
"Email"=>"chandroshy@sliate.lk"); (2 Marks)  
  
foreach($student as $key=>$temp) (2 Marks)  
  
{  
  
    echo "$key = $temp","<BR>"; (1 Mark)  
  
}
```

?>

- iv. Write a PHP function to display inserted data, by considering the following HTML form.

Join IEEE-2019

Full Name :

Address :

Membership Type: Professional Member ☐

Student Member ☐

☐ I accept the terms and conditions

Element	Attribute Properties
	Id or Name
Full Name Text Box	Name
Address Text Box	Addr
Membership Type Radio Button	mtype
I accept the terms and conditions checkbox	accept

```
<?php
    $fullname=$_POST["name"];
    $address=$_POST["addr"];
    $membership=$_POST["mtype"];
    $agreement=$_POST["accept"];
    echo "Your Full Name: ".$fullname."<br>";
    echo "Your Address: ".$address."<br>";
    echo "Membership Type: ".$membership."<br>";
    echo "Agreement: ".$agreement."<br>";
?>
```

(8*1=08 Marks)

(Total 20 Marks)

- Q6. Answer the below questions based on the given instructions
- DBMS : MySQL
- Web Programming Language : PHP

Database Server	: localhost
User Name	: root
Password	: galtri
Database Name	: HNDIT
Table Name	: researcher

Write PHP code fragment to do the following

- i. Create a connection to MySQL Database and check the connection.

Answer

```
// Create a MySQL connection
```

```
$connection = mysql_connect("localhost", "root", "galtri"); (2 Marks)
```

```
//check the connection
```

```
if (!$connection)
```

```
die('MySQL connection failed: ' . mysql_error()); (01 Mark)
```

- ii. Select the database HNDIT and create the table researcher.

[Hint: table structure-

researcher (Resid,Firstname, Lastname, Researcharea, Age)

Resid is a primary key]

Answer

```
//Select the database.
```

```
mysql_select_db("HNDIT"); (1 Mark)
```

```
// Create table
```

```
$sql = "CREATE TABLE researcher(Resid int NOT NULL  
AUTO_INCREMENT,PRIMARY KEY(Resid),Firstname varchar(15),Lastname  
varchar(15),Researcharea varchar(15),Age int)";
```

```
// Execute query
```

```
if (mysql_query($sql, $connection)) {
```

```
echo 'Successfully table created <br>';
```

```
} else {
```

```
echo 'Error creating table: ' . mysql_error() . '<br>';
```

```
}
```

(3 Marks)

- iii. Insert the below data set into the researcher table.

Firstname: Dr.Roshz

Lastname: Ragel

Researcharea: Ontology

Age:30

Answer

```
//insert data
```

```
$query2='INSERT INTO researcher
```

```
VALUES('','Dr.Roshz','Ragel','Ontology','30');
```

(05 Marks)

```
if (mysql_query($query2)) {
```

```
    echo 'Successfully data inserted <br>';
```

```
} else {
```

```
    echo 'Error inserting data: ' . mysql_error() . '<br>';
```

```
}
```

- iv. Change the Age to 32 of the researcher whose Resid=1 and display the records of the updated researcher as follows. [08 Marks]

ResID:1

First Name: Dr.Roshz

Last Name: Ragel

Research Interest: Ontology

Age:32

Answer

```
//update data
```

```
$query3 = "UPDATE researcher SET Age = '32' WHERE Resid = '1'";
```

(2 Marks)

```
if(! mysql_query( $query3)) {
```

```
    die('Could not update data: ' . mysql_error());
```

```
} else{
```

```
    echo "Updated data successfully <br>";
```

```
}
```

```
//Display all the details
```

```
$query4 = mysql_query("SELECT * FROM researcher WHERE Resid = 1 ");
```

(2 Marks)

```
while ($rows = mysql_fetch_array($query4)) {
```

(2 Marks)

```
    $id = $rows['Resid'];
```

(Total 20 Marks)

