Computer Science 571 Exam #1
Prof. Papa
Thursday, February 23, 2017, 6:00pm – 7:20pm

Name: **Student Id Number:**

1. This is a closed book exam.
2. Please answer all questions.
3. Place all answers on the exam and return the entire exam

HTTP QUESTIONS [20 PTS]

Below is part of an exchange of messages between the browser and www.google.com, obtained by running Live HTTP Headers. Answer the questions that follow. Each question is worth 2 points. <u>NOTICE: NO PARTIAL CREDIT on any of the questions.</u>

[1] https://www.google.com/

```
GET / HTTP/1.1
Host: www.google.com
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:26.0) Gecko/20100101
Firefox/26.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Cookie:
PREF=ID=6071bff31af7b094:U=5b697a0afdbaf161:LD=en:TM=1364436987:LM=1391
892814:GM=1:SG=
1:S=12CgY0xgmlOBnDi_;
NID=67=PRYGZwG3OrF_o6Whn6lBehspMzOutVAvVOJKq0Ziks5X5VtP4Uc2I9PJ-
QtENjxADGTYHWHpyivxKLU1blICu2iSLJ-31-NJc5QpFRvc-A7l3Da6137tUs3-
p4RTG3Yht4kzrkqxVKFSWJBDcrod97U5FqM3DC_MUU5RySdIYwsIm5vzB5kbrvJ01Bnw9W-
B7nPKrTToc2_C7SK08N3PjtSI-QFH8Y-FieJ6SFUkUge4;
SID=DQAAAMUAAAB1XWvlF7NFO8orDc0Q0bul4Lp8OhozF1djzsBVuLgYHgtlIhMZrSPaDzA
DJ8caOQMD0_YWSh
eGmVdQkzBAYlRDcVZHT8QDtrMiIOiSktkZ_FL60a47C_Jk5YfOF6KBhBZoSKXOSibfEdPji
CbZStTQEtLVdjar
s9PfD6o79ABT0AGHWkTAMWyPf9DcYyWCs4nClGFbBXUgdU_h0OxDrJeMEuxlnL51fRK90je
Q3GQS8on9Mm4Tby
qsxGgJgdwur4DPHrarkS8sonf16DRnrcV-; HSID=AGA2i2PO9edxpHm2N;
SSID=AdpAV2WHoO09IIXwB;
APISID=D-Yuaw6HFJxkMeac/A1otmp7Xh0t8tyq8D;
SAPISID=LKdAgPQoxwUrndVl/A1jT9hu7WxrSIr7Ve
Connection: keep-alive

HTTP/1.1 200 OK
```

```
Alternate-Protocol: 443:quic
Cache-Control: private, max-age=0
Content-Encoding: gzip
Content-Type: text/html; charset=UTF-8
Date: Sat, 08 Feb 2014 20:55:28 GMT
Expires: -1
Server: gws
Set-Cookie:
PREF=ID=6071bff31af7b094:U=5b697a0afdbaf161:FF=0:LD=en:TM=1364436987:LM
=1391892928:GM=
1:SG=1:S=Hzjj9NnFuvy09qII; expires=Mon, 08-Feb-2016 20:55:28 GMT;
path=/;
domain=.google.com
X-Frame-Options: SAMEORIGIN
---------------------------------------------------------
```

[2] https://www.google.com/gen_204?

GET
/gen_204?v=3&s=webhp&action=&e=31215,4000116,4007661,4007830,4008067,40
08133,4008142,4
009016,4009033,4009352,4009565,4009641,4010806,4010858,4010899,4011109,
4011228,4011258
,4011550,4011552,4011556,4011558,4011559,4011679,4011863,4011959,401199
6,4012001,40123
16,4012318,4012320,4012512,4012538,4012869,4012896,4012897,4013099,4013
100,4013338,401
3374,4013414,4013416,4013436,4013499,4013591,4013609,4013723,4013823,40
13842,4013868,4
013881,4013918,4013979,4014085,4014091,4014092,4014115,4014273,4014431,
4014513,4014515
,4014518,4014565,4014572,4014573,4014597,4014632,4014636,4014649,401468
5,4014718,40147
50,4014794,4014822,4014825,4014865,4014989,4015027,4015133,4015199,4015
222,8300007,850
0073,8500153,8500156,10200002,10200012,10200029,10200030,10200040,10200
066&ei=wJn2UqH3
H4PyoAS0yoH4Cw&imc=3&imn=3&imp=0&atyp=csi&adh=&xjs=init.30.39.sb.18.p.2
.foot.2.cr.1.r.
1&rt=xjsls.18,prt.18,xjses.86,xjsee.129,xjs.133,ol.209,iml.18,wsrt.349,
cst.0,dnst.0,rq
st.232,rspt.5 HTTP/1.1
Host: www.google.com
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:26.0) Gecko/20100101
Firefox/26.0
Accept: image/png,image/*;q=0.8,*/*;q=0.5
Accept-Language: en-US,en;q=0.5
```

```
Accept-Encoding: gzip, deflate
Referer: https://www.google.com/
Cookie:
PREF=ID=6071bff31af7b094:U=5b697a0afdbaf161:FF=0:LD=en:TM=1364436987:LM
=1391892928:GM=
1:SG=1:S=Hzjj9NnFuvy09qII;
NID=67=PRYGZwG3OrF_o6Whn6lBehspMzOutVAvVOJKq0Ziks5X5VtP4Uc2I9PJ-
QtENjxADGTYHWHpyivxKLU1blICu2iSLJ-31-NJc5QpFRvc-A7l3Da6137tUs3-
p4RTG3Yht4kzrkqxVKFSWJBDcrod97U5FqM3DC_MUU5RySdIYwsIm5vzB5kbrvJ01Bnw9W-
B7nPKrTToc2_C7SK08N3PjtSI-QFH8Y-FieJ6SFUkUge4;
SID=DQAAAMUAAAB1XWvlF7NFO8orDc0Q0bul4Lp8OhozF1djzsBVuLgYHgtlIhMZrSPaDzA
DJ8caOQMD0_YWSh
eGmVdQkzBAYlRDcVZHT8QDtrMiIOiSktkZ_FL60a47C_Jk5YfOF6KBhBZoSKXOSibfEdPji
CbZStTQEtLVdjar
s9PfD6o79ABT0AGHWkTAMWyPf9DcYyWCs4nClGFbBXUgdU_h0OxDrJeMEuxlnL51fRK90je
Q3GQS8on9Mm4Tby
qsxGgJgdwur4DPHrarkS8sonf16DRnrcV-; HSID=AGA2i2PO9edxpHm2N;
SSID=AdpAV2WHoO09IIXwB;
APISID=D-Yuaw6HFJxkMeac/A1otmp7Xh0t8tyq8D;
SAPISID=LKdAgPQoxwUrndVl/A1jT9hu7WxrSIr7Ve
Connection: keep-alive

HTTP/1.1 204 No Content
Alternate-Protocol: 443:quic
Content-Length: 0
Content-Type: text/html; charset=UTF-8
Date: Sat, 08 Feb 2014 20:55:28 GMT
Server: gws
Set-Cookie:
PREF=ID=6071bff31af7b094:U=5b697a0afdbaf161:FF=0:LD=en:TM=1364436987:LM
=1391892928:GM=
1:SG=1:S=Hzjj9NnFuvy09qII; expires=Mon, 08-Feb-2016 20:55:28 GMT;
path=/;
domain=.google.com
X-Frame-Options: SAMEORIGIN
----------------------------------------------------------
[3] https://plus.google.com/u/0/_/n/gcosuc

POST /u/0/_/n/gcosuc HTTP/1.1
Host: plus.google.com
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:26.0) Gecko/20100101
Firefox/26.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Content-Type: application/x-www-form-urlencoded;charset=utf-8
```

Referer: https://www.google.com/
Content-Length: 109
Origin: https://www.google.com
Cookie:
PREF=ID=6071bff31af7b094:U=5b697a0afdbaf161:FF=0:LD=en:TM=1364436987:LM=1391892928:GM=
1:SG=1:S=Hzjj9NnFuvy09qII;
NID=67=PRYGZwG3OrF_o6Whn6lBehspMzOutVAvVOJKq0Ziks5X5VtP4Uc2I9PJ-
QtENjxADGTYHWHpyivxKLU1blICu2iSLJ-31-NJc5QpFRvc-A7l3Da6137tUs3-
p4RTG3Yht4kzrkqxVKFSWJBDcrod97U5FqM3DC_MUU5RySdIYwsIm5vzB5kbrvJ01Bnw9W-
B7nPKrTToc2_C7SK08N3PjtSI-QFH8Y-FieJ6SFUkUge4;
SID=DQAAAMUAAAB1XWvlF7NFO8orDc0Q0bul4Lp8OhozF1djzsBVuLgYHgtlIhMZrSPaDzA
DJ8caOQMD0_YWSh
eGmVdQkzBAYlRDcVZHT8QDtrMiIOiSktkZ_FL60a47C_Jk5YfOF6KBhBZoSKXOSibfEdPji
CbZStTQEtLVdjar
s9PfD6o79ABT0AGHWkTAMWyPf9DcYyWCs4nClGFbBXUgdU_h0OxDrJeMEuxlnL51fRK90je
Q3GQS8on9Mm4Tby
qsxGgJgdwur4DPHrarkS8sonf16DRnrcV-; HSID=AGA2i2PO9edxpHm2N;
SSID=AdpAV2WHoO09IIXwB;
APISID=D-Yuaw6HFJxkMeac/A1otmp7Xh0t8tyq8D;
SAPISID=LKdAgPQoxwUrndVl/A1jT9hu7WxrSIr7Ve;
OTZ=2159788_88_88_104280_84_446940
Connection: keep-alive
Pragma: no-cache
Cache-Control: no-cache
ntok=APfa0bqYOnKQRBOfWlHl6L6lyG1MfVeUEl3G2Un_p8sxUzuu4gxcPmU7g0vP7LTmJt
BAIcVYoCNKJG11_
x7QxETGf3-zi_t1Cw%3D%3D

HTTP/1.1 200 OK
access-control-allow-credentials: true
access-control-allow-origin: https://www.google.com
Alternate-Protocol: 443:quic
Cache-Control: no-cache, no-store, max-age=0, must-revalidate
Content-Disposition: attachment; filename="json.txt"; filename*=UTF-
8''json.txt
Content-Encoding: gzip
Content-Type: application/json; charset=utf-8
Date: Sat, 08 Feb 2014 20:55:29 GMT
Expires: Fri, 01 Jan 1990 00:00:00 GMT
Pragma: no-cache
Server: GSE
X-Frame-Options: SAMEORIGIN
----
[4]
https://plus.google.com/u/0/_/notifications/frame?sourceid=1&hl=en&orig

in=https%3A%2F%
2Fwww.google.com&jsh=m%3B%2F_%2Fscs%2Fabc-
static%2F_%2Fjs%2Fk%3Dgapi.gapi.en.BjPelxWx9Rw.O%2Fm%3D__features__%2Fr
t%3Dj%2Fd%3D1%2
Frs%3DAItRSTMdKBwySIqw0iL_wtXL-
PuVX_sSCQ#pid=1&rpctoken=undefined&_methods=onError%2ConInfo%2ChideNoti
ficationWidget%
2CpostSharedMessage%2Creauth%2CsetNotificationWidgetHeight%2CsetNotific
ationWidgetSize
%2CswitchTo%2CnavigateTo%2CsetNotificationText%2CsetNotificationAnimati
on%2CgetNotific
ationText%2C_ready%2C_close%2C_open%2C_resizeMe%2C_renderstart&id=I1_13
91892938641&par
ent=https%3A%2F%2Fwww.google.com&pfname=

GET
/u/0/_/notifications/frame?sourceid=1&hl=en&origin=https%3A%2F%2Fwww.go
ogle.com&jsh=m%
3B%2F_%2Fscs%2Fabc-
static%2F_%2Fjs%2Fk%3Dgapi.gapi.en.BjPelxWx9Rw.O%2Fm%3D__features__%2Fr
t%3Dj%2Fd%3D1%2
Frs%3DAItRSTMdKBwySIqw0iL_wtXL-PuVX_sSCQ HTTP/1.1
Host: plus.google.com
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:26.0) Gecko/20100101
Firefox/26.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Referer: https://www.google.com/
Cookie:
PREF=ID=6071bff31af7b094:U=5b697a0afdbaf161:FF=0:LD=en:TM=1364436987:LM
=1391892928:GM=
1:SG=1:S=Hzjj9NnFuvy09qII;
NID=67=PRYGZwG3OrF_o6Whn6lBehspMzOutVAvVOJKq0Ziks5X5VtP4Uc2I9PJ-
QtENjxADGTYHWHpyivxKLU1blICu2iSLJ-31-NJc5QpFRvc-A7l3Da6137tUs3-
p4RTG3Yht4kzrkqxVKFSWJBDcrod97U5FqM3DC_MUU5RySdIYwsIm5vzB5kbrvJ01Bnw9W-
B7nPKrTToc2_C7SK08N3PjtSI-QFH8Y-FieJ6SFUkUge4;
SID=DQAAAMUAAAB1XWvlF7NFO8orDc0Q0bul4Lp8OhozF1djzsBVuLgYHgtlIhMZrSPaDzA
DJ8caOQMD0_YWSh
eGmVdQkzBAYlRDcVZHT8QDtrMiIOiSktkZ_FL60a47C_Jk5YfOF6KBhBZoSKXOSibfEdPji
CbZStTQEtLVdjar
s9PfD6o79ABT0AGHWkTAMWyPf9DcYyWCs4nClGFbBXUgdU_h0OxDrJeMEuxlnL51fRK90je
Q3GQS8on9Mm4Tby
qsxGgJgdwur4DPHrarkS8sonf16DRnrcV-; HSID=AGA2i2PO9edxpHm2N;
SSID=AdpAV2WHoO09IIXwB;
APISID=D-Yuaw6HFJxkMeac/A1otmp7Xh0t8tyq8D;

```
SAPISID=LKdAgPQoxwUrndVl/A1jT9hu7WxrSIr7Ve;
OTZ=2159788_88_88_104280_84_446940
Connection: keep-alive

HTTP/1.1 200 OK
Alternate-Protocol: 443:quic
Cache-Control: private, max-age=0
Content-Encoding: gzip
Content-Type: text/html; charset=utf-8
Date: Sat, 08 Feb 2014 20:55:29 GMT
Expires: Sat, 08 Feb 2014 20:55:29 GMT
Server: GSE
x-content-type-options: nosniff
-----------------------------------------------------------
```

[5] http://127.0.0.1:49203/test.txt?_=1391892942342

```
GET /test.txt?_=1391892942342 HTTP/1.1
Host: 127.0.0.1:49203
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:26.0) Gecko/20100101
Firefox/26.0
Accept: text/plain, */*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
X-Requested-With: XMLHttpRequest
Connection: keep-alive

HTTP/1.1 200 OK
Content-Type: text/plain
Date: Sat, 08 Feb 2014 20:55:42 GMT
Last-Modified: Tue, 02 Oct 2012 14:08:14 GMT
-----------------------------------------------------
```

Q1. What browser, name and version, participated in the exchange of HTTP data?

Answer: Answer: Firefox, version 26

Q2. List the names of all web servers involved in these transactions?

Answer: gws, GSE

Q3. How many transactions between client and server occur?

Answer: 5

Q4. What is the name of the web server that returns the Google home page HTML?

`gws`

Q5. How many bytes of data are transmitted in the POST?

109 bytes

Q6. List any transactions that are "compressed".

#1, #3, #4

Q7. How many redirects are executed in the above transactions?

none

Q8. List three (3) headers used to improve browser cache performance?

Expires, Cache-Control, Pragma

Q9. What types of compression are supported by the Firefox browser used in these transactions?

gzip

Q10. What type of content is transferred in transaction 2?

None. No content is transferred in transaction 2.

JAVASCRIPT QUESTIONS [20 pts]

Below are three screenshots, taken one after another, of a web page followed by the JavaScript code that implements the page. Some of the code is missing. Fill in the missing code. Each answer is worth 2 points.

```
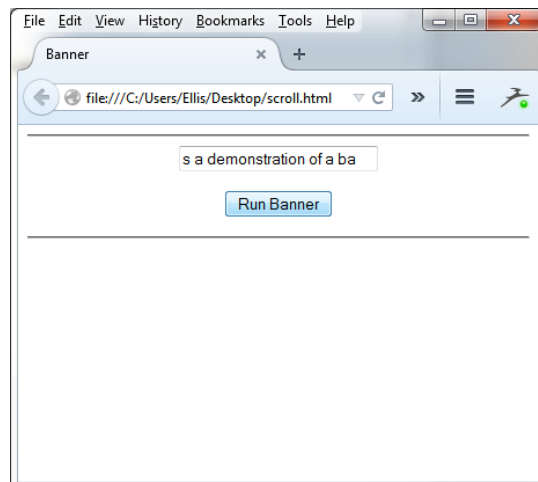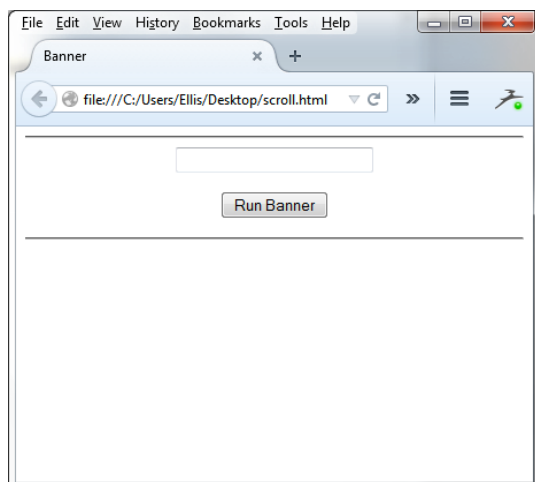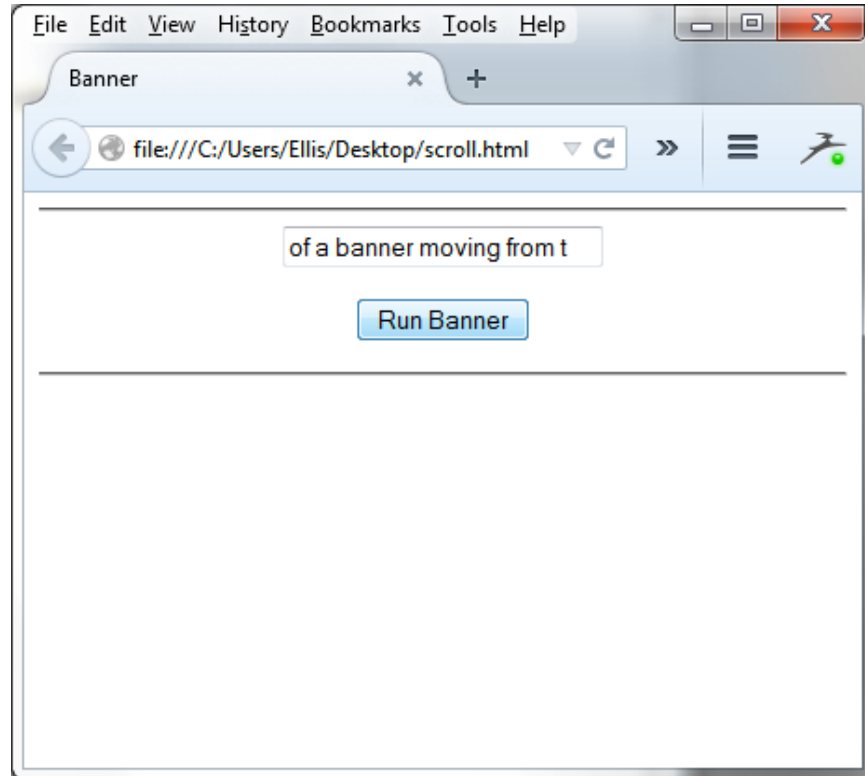<HTML>
<HEAD><TITLE> Banner</TITLE>

<SCRIPT LANGUAGE= "javascript">
var sent = "This is a demonstration of a banner moving from the left to
right.";
var slen = sent.length;
var siz = 25;
var a = -3, b = 0;
var subsent = "x";

function makeSub(a,b) {
subsent = sent.substring(a,b) ;
return subsent;
}

function newMake() {
a = a + 3;
b = a + siz;
makeSub(a,b);
return subsent;
}

function doIt() {
for (var i = 1; i <= slen ; i++) {
1.
```

```
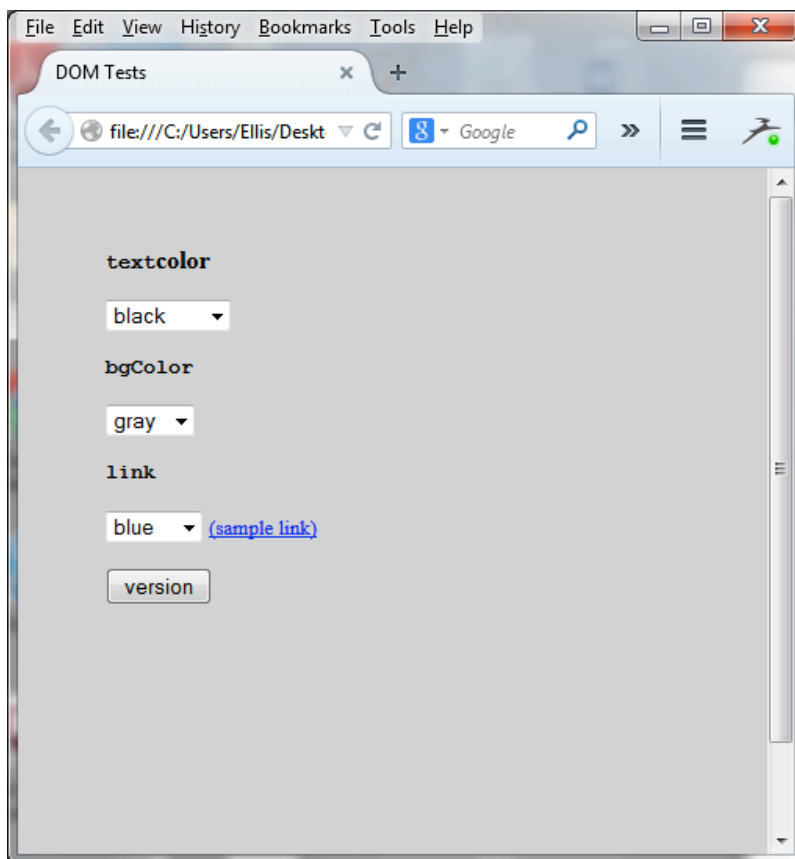setTimeout("document.z.textdisplay.value = newMake()", i*300);
2. 3.
setTimeout("window.status = newMake()", i*300);
4.
}
}

</SCRIPT></HEAD>
<BODY >
<HR> <CENTER>
<FORM NAME="z">
<INPUT NAME="textdisplay" TYPE="text" SIZE=25> <P>
<INPUT NAME="doit" Type="button" value = "Run Banner" onClick =
"doIt()">  5.
</FORM></CENTER>
<HR>
</BODY></HTML>
```

Below is a web page and beneath that is the HTML and JavaScript that generates the page. Some of the code is missing. Fill in the missing code.


```
1.<html>
2.   <head>
3.     <title>DOM Tests</title>
4.     <script type="application/javascript">
5.     function setBodyAttr(attr,value){
6.     if (document.body) eval('document.body.'+attr+'="'+value+'"');
```

```
7.    else notSupported();
8.    }
9.    </script>
10.  </head>
11.  <body>
12.   <div style="margin: .5in; height: 400;">
13.     <p><b><tt>text</tt>color</b></p>
14.     <form>
15.       <select onChange="setBodyAttr('text',            6.
16.       this.options[this.selectedIndex].value);">       7.
17.         <option value="black">black
18.         <option value="darkblue">darkblue
19.       </select>
20.       <p><b><tt>bgColor</tt></b></p>
21.       <select onChange="setBodyAttr('bgColor',          8.
22.       this.options[this.selectedIndex].value);">
23.         <option value="white">white
24.         <option value="lightgrey">gray
25.       </select>
26.       <p><b><tt>link</tt></b></p>
27.       <select onChange="setBodyAttr('link',             9.
28.       this.options[this.selectedIndex].value);">
29.         <option value="blue">blue
30.         <option value="green">green
31.       </select>  <small>
32.       <a href="http://www.brownhen.com/dom_api_top.html" id="sample">
33.         (sample link)</a></small><br>
34.     </form>
35.     <form>
36.       <input type="button" value="version" onclick="ver()" />
37.     </form>
38.   </div>
39.  </body>
40.</html>
```

Q10. When the user selects the 'blue option for 'link' what line is executed?

Answer: line 27

PHP QUESTIONS [15 PTS]

Below are two screenshots of a web page, an initial screenshot, then after some fields have been filled in. A third screenshot shows the output after the submit button is clicked. Below is the PHP code that was used. Fifteen lines have some missing code. Each line is worth one point. Provide the missing code.

```php
<?php
        // if page is not submitted to itself echo the form
        if (!isset($_POST['submit'])) {
?>
<html>
<head>
<title>Personal INFO</title>
</head>
<body style='background-color: #8FD8D8'>
<!—-The form is submitted to itself-->
<form method="post" action="<?php echo $_SERVER['PHP_SELF'];?>">
        First Name:<input type="text" size="12" maxlength="12" name="Fname"><br />

        Last Name:<input type="text" size="12" maxlength="36" name="Lname"><br />

        Gender:<br />
        Male:<input type="radio" value="Male" name="gender"><br />
```

```php
Female:<input type="radio" value="Female" name="gender"><br />

Please choose your favourite foods:<br />
Steak:<input type="checkbox" value="Steak" name="food[]"><br />
Pizza:<input type="checkbox" value="Pizza" name="food[]"><br />
Chicken:<input type="checkbox" value="Chicken" name="food[]"><br />

<textarea rows="5" cols="20" name="quote" wrap="physical">
Enter your favorite quote!</textarea><br />

Select a Level of Education:<br />
<select name="education">
<option value="Jr.High">Jr.High</option>
<option value="HighSchool">HighSchool</option>
<option value="College">College</option></select><br />

Select your favourite time of day:<br />
<select name="TofD" size="3">
<option value="Morning">Morning</option>
<option value="Day">Day</option>
<option value="Night">Night</option></select><br />

<input type="submit" value="submit" name="submit">
</form>
<?php
}
else
{
        //Extract information of the submitted form fileds
        $Fname = $_POST["Fname"];
        $Lname = $_POST["Lname"];
        $gender = $_POST["gender"];
        $food = $_POST["food"];
        $quote = $_POST["quote"];
        $education = $_POST["education"];
        $TofD = $_POST["TofD"];

        echo "<body style='background-color: #8FD8D8'>";
        echo "Hello, " . $Fname . " " . $Lname . ".<br />";
        echo "You are " . $gender . ", and you like ";
         //print the list of selected foods
        foreach ($food as $f) {
                echo $f . "<br />";
        }
        echo "<i>" . $quote . "</i><br />";
        echo "You're favorite time is ".$TofD.", and you passed ".$education."!<br />";
```

```
        echo "</body>";
}
?>
```

JAVASCRIPT REGULAR EXPRESSIONS QUESTIONS [5 PTS]

The regular expression below includes three sets of parentheses (...). Explain in one sentence the pattern contained in each of the parentheses.

var pattern = "^(\w+)@([a-zA-Z_]+)\.([a-zA-Z]{2,3})$";

Q1. [5 pts] What is the purpose of the pattern within the first set of parentheses? (\w+)

Answer: One or more alphanumeric characters

Q2. [5 pts] What is the purpose of the pattern within the second set of parentheses? ([a-zA-Z_]+)

 Answer: one or more alphabetic upper/lower case or underscore

Q3. [5 pts] What is the purpose of the pattern within the third set of parentheses? ([a-zA-Z]{2,3})

Answer: two or three alphabetic characters

Q4. [5 pts] What is the purpose of the ^ and the $?

Answer: the ^ anchors the pattern at the start of the string. The $ anchors the pattern at the end of the string;

JavaScript 1.5 introduced a new notation for Regular Expressions using the ?= notation. Please explain the meaning the following regular expression:

Q5. ?=.*\d

Answer: means at least one character that is a number

CSS QUESTIONS [20 PTS]

Below are lines extracted from the CSS sheet of bing.com. For each line answer the question. Each question is worth four points.

Q1. Give an HTML example usage of the declaration below:

```
.spw_tb li{display:inline;line-height:normal}
```

A1.

```
<div class="spw_tb>
        <ul>
              <li>
              <li>
        </ul>
</div>
```

Q2. What does this declaration do?

```
a,body{color:#f00;text-decoration:none}
```

A2. Changes the color to RED and text-decoration to NONE for the CSS properties for the A (Anchor) and BODY tags

Q3. Give two (2) HTML examples of usage of the declaration below:

```
#hp_spw_hdr, .sw_tb div {display:inline}
```
A3.

```
<div id="hp_spw_hdr"> </div>
<table class="sw_tb">
    <div>
    some text
    </div>
</table>
```

Q4. Write in the CSS to create a "class" named `hp_my_logo` **that changes the CSS properties of background-position to 10 pixels, the margin_top to -75 pixels and the height to 121 pixels.**

A4.

```
.hp_my_logo {background-position:10px;margin-top:-
75px;height:121px}
```

Q5. Give three (3) HTML examples of usage of the declaration below:

```
#cbsCarousel, .carouselNav, p {
     color:#fff;
```

```
        text-decoration:none;
}
```
A5.

<div ID="cbsCarousel"> </div>

<div class="carouselNav"> </div>

<p> some text</p>

LYNDA.COM QUESTIONS [20 PTS]

For each of the following questions, you will need to complete the answer provided. Each question is worth 2 points.

A. What is the box model?

Q1. The box model is the term used to describe the rules surrounding the physical properties of all HTML elements.

Q2. Every single element on your web page is considered to be in a rectangular box.

Q3. The 4 properties of this box, its width, height, padding, and margin define not only the size of the element, but also the how it relates to the elements around it.

B. What is an XML Schema?

Q3. An alternative way of enforcing rules and constraints on your XML data.

Q4. An alternative to using DTDs.

Q5. An XML schema allows you to constrain the document content.

Q6. In XML Schemas you can also do things like derive your own types.

C. What is an Array?

Q7. An array is a single variable that holds multiple values.

Q8. To tell JavaScript this is an array, there are a few ways to do it, but the easiest one is this:

var multipleValues = opening square bracket, closing square bracket. – OR – [ ]

Q9. Arrays in JavaScript use what's called a zero-based index.

Q10. Because arrays are objects they have properties and methods.