Computer Science 571 Exam #1
Prof. Papa
Friday, February 25, 2016, 6:00pm – 7:20pm
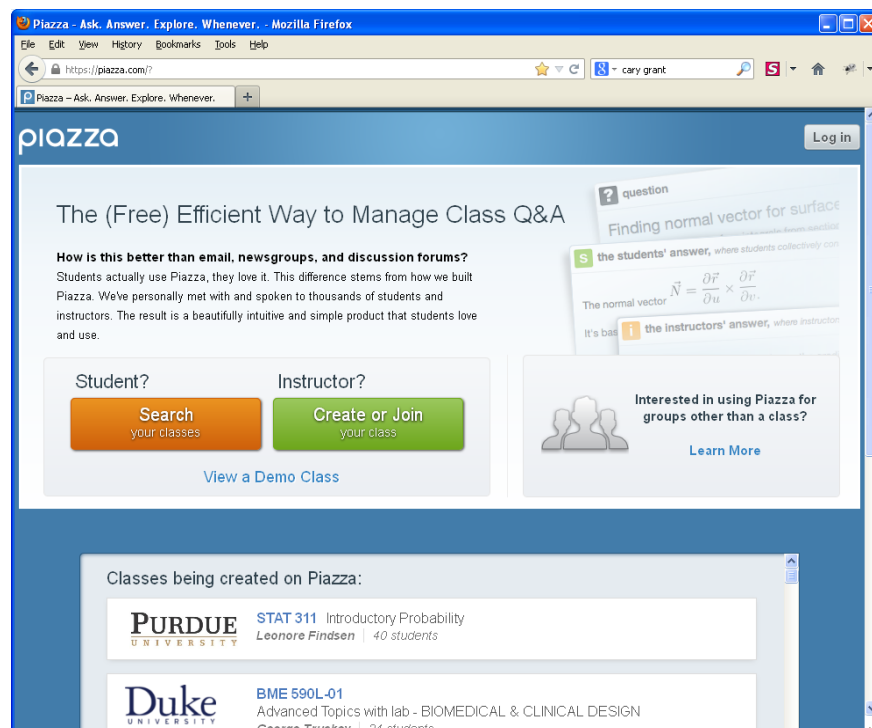
Name: **Student Id Number:**

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

IMPORTANT Note: For each multiple-choice question, please choose all correct answers –OR- "All of the above". <u>There is no partial credit for a partial answer.</u>

HTTP [20 POINTS]

The picture above is a snapshot of the Piazza home page. Below, are the HTTP headers exchanged between the browser and Bing. The transactions have been edited, leaving only a few of the transactions.

```
-------------------------------------------------------------Transaction 1
http://ocsp.godaddy.com/
POST / HTTP/1.1
Host: ocsp.godaddy.com
User-Agent: Mozilla/5.0 (Windows NT 5.1; rv:19.0) Gecko/20100101 Firefox/19.0
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-Length: 106
```

```
Content-Type: application/ocsp-request
Connection: keep-alive


HTTP/1.1 200 OK
Date: Fri, 22 Feb 2013 18:24:27 GMT
Server: Apache
content-transfer-encoding: Binary
Cache-Control: max-age=12905, public, no-transform, must-revalidate
Last-Modified: Fri, 22 Feb 2013 16:10:52 GMT
Expires: Fri, 22 Feb 2013 22:10:52 GMT
Etag: "2e38ac3a0ac40d876bb7ba482005e6c68ceb96a9"
p3p: CP="IDC DSP COR LAW CUR ADM DEV TAI PSA PSD IVA IVD HIS OUR SAM PUB LEG UNI COM
NAV STA"
Content-Length: 1923
Connection: close
Content-Type: application/ocsp-response
-----------------------------------------------------------Transaction 2
https://www.piazza.com/

GET / HTTP/1.1
Host: www.piazza.com
User-Agent: Mozilla/5.0 (Windows NT 5.1; rv:19.0) Gecko/20100101 Firefox/19.0
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: piazza_session=EGyCDvHvKwuwCyLDEDGGtxGyFuHDEFGx.0;
__utma=231435806.1547084154.1357668061.1361132434.1361506957.15;
__utmz=231435806.1357668061.1.1.utmcsr=(direct)|utmccn=(direct)|utmcmd=(none);
__utmv=231435806.|2=user_type=instructor=1
Connection: keep-alive

HTTP/1.1 302 Found
Server: nginx/1.2.1.1431
Date: Fri, 22 Feb 2013 18:24:27 GMT
Content-Type: text/html; charset=utf-8
Content-Length: 86
Connection: close
Status: 302
X-Powered-By: Phusion Passenger (mod_rails/mod_rack) 3.0.7
Set-Cookie: piazza_session=EGyCDvHvKwuwCyLDEDGGtxGyFuHDEFGx.0; path=/; expires=Thu, 22
Aug 2013 18:24:27 GMT; HttpOnly
X-Runtime: 0
Location: https://piazza.com/?
Cache-Control: no-cache
-----------------------------------------------------------Transaction 3
https://piazza.com/?

GET /? HTTP/1.1
Host: piazza.com
User-Agent: Mozilla/5.0 (Windows NT 5.1; rv:19.0) Gecko/20100101 Firefox/19.0
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: __utma=231435806.1547084154.1357668061.1361132434.1361506957.15;
__utmz=231435806.1357668061.1.1.utmcsr=(direct)|utmccn=(direct)|utmcmd=(none);
last_piaz_user=gr81dafcQqZ; __utmv=231435806.|2=user_type=instructor=1
Connection: keep-alive
If-None-Match: "2549c6767dbab8e1f80868d7e90d7c02"

HTTP/1.1 200 OK
Server: nginx/1.2.1.1431
Date: Fri, 22 Feb 2013 18:24:27 GMT
```

```
Content-Type: text/html; charset=utf-8
Transfer-Encoding: chunked
Connection: close
Vary: Accept-Encoding
Status: 200
X-Powered-By: Phusion Passenger (mod_rails/mod_rack) 3.0.7
Set-Cookie:
piazza_session=HuyLKtGCDIIFLxvutxKxttyGJLvttLvy.5%26x%26%26%7C%22%21r%7Cw5M5Trab_rf%2C
V%2CV%5E5%3F5%275MD0; path=/; expires=Thu, 22 Aug 2013 18:24:27 GMT; HttpOnly
X-Runtime: 96
p3p: CP='IDC DSP CURa ADMa DEVa OUR ONL UNI COM NAV'
Etag: "5f45fe0637dfbc9241d25b51926dd804"
Cache-Control: private, max-age=0, must-revalidate
Content-Encoding: gzip
----------------------------------------------------------Transaction 4
https://piazza.com/css/splash/style.css?v=5202

GET /css/splash/style.css?v=5202 HTTP/1.1
Host: piazza.com
User-Agent: Mozilla/5.0 (Windows NT 5.1; rv:19.0) Gecko/20100101 Firefox/19.0
Accept: text/css,*/*;q=0.1
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Cookie: __utma=231435806.1547084154.1357668061.1361132434.1361506957.15;
__utmz=231435806.1357668061.1.1.utmcsr=(direct)|utmccn=(direct)|utmcmd=(none);
last_piaz_user=gr81dafcQqZ; __utmv=231435806.|2=user_type=instructor=1;
piazza_session=HuyLKtGCDIIFLxvutxKxttyGJLvttLvy.5%26x%26%26%7C%22%21r%7Cw5M5Trab_rf%2C
V%2CV%5E5%3F5%275MD0
Connection: keep-alive


HTTP/1.1 200 OK
Server: nginx/1.2.1.1431
Date: Fri, 22 Feb 2013 18:24:28 GMT
Content-Type: text/css
Transfer-Encoding: chunked
Connection: close
Last-Modified: Tue, 19 Feb 2013 03:31:35 GMT
Vary: Accept-Encoding
Expires: Mon, 25 Mar 2013 18:24:28 GMT
Cache-Control: max-age=2678400
Content-Encoding: gzip
----------------------------------------------------------Transaction 5
https://connect.facebook.net/en_US/all.js

GET /en_US/all.js HTTP/1.1
Host: connect.facebook.net
User-Agent: Mozilla/5.0 (Windows NT 5.1; rv:19.0) Gecko/20100101 Firefox/19.0
Accept: */*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
If-None-Match: "094376e05ec9a60405bad2f7c3718bf0"

HTTP/1.1 304 Not Modified
Content-Type: application/x-javascript; charset=utf-8
Etag: "094376e05ec9a60405bad2f7c3718bf0"
Cache-Control: public, max-age=124
Expires: Fri, 22 Feb 2013 18:26:32 GMT
Date: Fri, 22 Feb 2013 18:24:28 GMT
Connection: keep-alive
----------------------------------------------------------Transaction 6
https://piazza.com/javascripts/sliding-panel.js?v=5202
```

```
GET /javascripts/sliding-panel.js?v=5202 HTTP/1.1
Host: piazza.com
User-Agent: Mozilla/5.0 (Windows NT 5.1; rv:19.0) Gecko/20100101 Firefox/19.0
Accept: */*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Cookie: __utma=231435806.1547084154.1357668061.1361132434.1361506957.15;
__utmz=231435806.1357668061.1.1.utmcsr=(direct)|utmccn=(direct)|utmcmd=(none);
last_piaz_user=gr81dafcQqZ; __utmv=231435806.|2=user_type=instructor=1;
piazza_session=HuyLKtGCDIIFLxvutxKxttyGJLvttLvy.5%26x%26%26%7C%22%21r%7Cw5M5Trab_rf%2C
V%2CV%5E5%3F5%275MD0
Connection: keep-alive

HTTP/1.1 200 OK
Server: nginx/1.2.1.1431
Date: Fri, 22 Feb 2013 18:24:28 GMT
Content-Type: application/x-javascript
Transfer-Encoding: chunked
Connection: close
Last-Modified: Thu, 29 Nov 2012 09:02:40 GMT
Vary: Accept-Encoding
Expires: Mon, 25 Mar 2013 18:24:28 GMT
Cache-Control: max-age=2678400
Content-Encoding: gzip
----------------------------------------------------------Transaction 7
https://piazza.com/js/splash/splash.js?v=5202

GET /js/splash/splash.js?v=5202 HTTP/1.1
Host: piazza.com
User-Agent: Mozilla/5.0 (Windows NT 5.1; rv:19.0) Gecko/20100101 Firefox/19.0
Accept: */*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Cookie: __utma=231435806.1547084154.1357668061.1361132434.1361506957.15;
__utmz=231435806.1357668061.1.1.utmcsr=(direct)|utmccn=(direct)|utmcmd=(none);
last_piaz_user=gr81dafcQqZ; __utmv=231435806.|2=user_type=instructor=1;
piazza_session=HuyLKtGCDIIFLxvutxKxttyGJLvttLvy.5%26x%26%26%7C%22%21r%7Cw5M5Trab_rf%2C
V%2CV%5E5%3F5%275MD0
Connection: keep-alive

HTTP/1.1 200 OK
Server: nginx/1.2.1.1431
Date: Fri, 22 Feb 2013 18:24:28 GMT
Content-Type: application/x-javascript
Transfer-Encoding: chunked
Connection: close
Last-Modified: Thu, 17 Jan 2013 20:43:36 GMT
Vary: Accept-Encoding
Expires: Mon, 25 Mar 2013 18:24:28 GMT
Cache-Control: max-age=2678400
Content-Encoding: gzip
----------------------------------------------------------Transaction 8
https://piazza.com/piazzza_js/ajax.js?v=5202

GET /piazzza_js/ajax.js?v=5202 HTTP/1.1
Host: piazza.com
User-Agent: Mozilla/5.0 (Windows NT 5.1; rv:19.0) Gecko/20100101 Firefox/19.0
Accept: */*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Cookie: __utma=231435806.1547084154.1357668061.1361132434.1361506957.15;
__utmz=231435806.1357668061.1.1.utmcsr=(direct)|utmccn=(direct)|utmcmd=(none);
last_piaz_user=gr81dafcQqZ; __utmv=231435806.|2=user_type=instructor=1;
```

```
piazza_session=HuyLKtGCDIIFLxvutxKxttyGJLvttLvy.5%26x%26%26%7C%22%21r%7Cw5M5Trab_rf%2C
V%2CV%5E5%3F5%275MD0
Connection: keep-alive

HTTP/1.1 200 OK
Server: nginx/1.2.1.1431
Date: Fri, 22 Feb 2013 18:24:28 GMT
Content-Type: application/x-javascript
Transfer-Encoding: chunked
Connection: close
Last-Modified: Thu, 07 Feb 2013 08:37:42 GMT
Vary: Accept-Encoding
Expires: Mon, 25 Mar 2013 18:24:28 GMT
Cache-Control: max-age=2678400
Content-Encoding: gzip
-----------------------------------------------------------Transaction 9
https://ssl.google-
analytics.com/__utm.gif?utmwv=5.3.9&utms=1&utmn=1800083830&utmhn=piazza.com&utme=8(2!u
ser_type)9(2!instructor)11(2!1)&utmcs=UTF-8&utmsr=1920x1080&utmvp=1006x754&utmsc=24-
bit&utmul=en-
us&utmje=1&utmfl=11.5%20r502&utmdt=Piazza%20%E2%80%93%20Ask.%20Answer.%20Explore.%20Wh
enever.&utmhid=381092738&utmr=-&utmp=%2F&utmac=UA-21514163-
1&utmcc=__utma%3D231435806.1547084154.1357668061.1361506957.1361557560.16%3B%2B__utmz%
3D231435806.1357668061.1.1.utmcsr%3D(direct)%7Cutmccn%3D(direct)%7Cutmcmd%3D(none)%3B&
utmu=q~

GET
/__utm.gif?utmwv=5.3.9&utms=1&utmn=1800083830&utmhn=piazza.com&utme=8(2!user_type)9(2!
instructor)11(2!1)&utmcs=UTF-8&utmsr=1920x1080&utmvp=1006x754&utmsc=24-bit&utmul=en-
us&utmje=1&utmfl=11.5%20r502&utmdt=Piazza%20%E2%80%93%20Ask.%20Answer.%20Explore.%20Wh
enever.&utmhid=381092738&utmr=-&utmp=%2F&utmac=UA-21514163-
1&utmcc=__utma%3D231435806.1547084154.1357668061.1361506957.1361557560.16%3B%2B__utmz%
3D231435806.1357668061.1.1.utmcsr%3D(direct)%7Cutmccn%3D(direct)%7Cutmcmd%3D(none)%3B&
utmu=q~ HTTP/1.1
Host: ssl.google-analytics.com
User-Agent: Mozilla/5.0 (Windows NT 5.1; rv:19.0) Gecko/20100101 Firefox/19.0
Accept: image/png,image/*;q=0.8,*/*;q=0.5
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive

HTTP/1.1 200 OK
Age: 87787
Cache-Control: private, no-cache, no-cache=Set-Cookie, proxy-revalidate
Content-Length: 35
Content-Type: image/gif
Date: Thu, 21 Feb 2013 18:01:53 GMT
Expires: Wed, 19 Apr 2000 11:43:00 GMT
Last-Modified: Wed, 21 Jan 2004 19:51:30 GMT
Pragma: no-cache
Server: GFE/2.0
X-Content-Type-Options: nosniff
X-Firefox-Spdy: 3
-----------------------------------------------------------
```

Each of the following questions is worth 2 points. There is <u>no partial credit</u>
allowed.

Q1: How many web servers are involved in these HTTP transactions and what are
their complete names?

A1:

Q2: What is the name and version of the browser used in these transactions?

A2:

Q3: What engine is the browser using?

A3:

Q4: Are any transactions returning compressed data? If so, which ones?

A4:

Q5: Transaction 2 returns "302 Found". What does that mean?

A5:

Q6: What data is returned by the browser in transaction 5 and why?

A6:

Q7: Is the Etag returned in the response to transaction 5 used anywhere else, and if it is "where"?

A7:

Q8: Name 4 headers used in these transactions for cache control.

A8:

Q9: Are any transactions using HTTP/2 or SPDY?

A9:

Q10: What type(s) of files are transmitted in "compressed" format?

A10:

DOM QUESTIONS [20 POINTS]

[5 points] Below is a simple XML file that defines a "boxlist" containing "boxes" of different sizes. The "size" of the box must always be listed. There can be any number of boxes, in any order, and a box can be empty or have any number of "items".

```
<boxlist>
    <box size="big">This is a big box</box>
    <box size = "medium">Medium sized box
      <item>Some Stuff</item>
      <item>More stuff</item>
    </box>
    <box size = "small">this is a small box</box>
</boxlist>
```

Write a DTD that could be used to describe this and other XML files that satisfy the above specification. <u>Partial credit will be allowed</u>.

Answer:

[15 points] The following set of examples makes use of this XML file (books.xml):

```
<bookstore>
<book category="cooking">
<title lang="en">Everyday Italian</title>
<author>Giada De Laurentiis</author>
<year>2005</year>
<price>30.00</price>
</book>
<book category="children">
<title lang="en">Harry Potter</title>
<author>J K. Rowling</author>
<year>2005</year>
<price>29.99</price>
</book>
<book category="web">
```

```
<title lang="en">XQuery Kick Start</title>
<author>James McGovern</author>
<author>Per Bothner</author>
<author>Kurt Cagle</author>
<author>James Linn</author>
<author>Vaidyanathan Nagarajan</author>
<year>2003</year>
<price>49.99</price>
</book>
<book category="web" cover="paperback">
<title lang="en">Learning XML</title>
<author>Erik T. Ray</author>
<year>2003</year>
<price>39.95</price>
</book>
</bookstore>
```

You will be asked to fill some missing lines. Each missing line is worth 1 point. There is not partial credit.

To start the examples we need a way of downloading the XML file. This is done using the function loadXMLDoc that follows. Fill in the missing code:

```
function loadXMLDoc(dname)
{
if (window.XMLHttpRequest)
{ xhttp=new XMLHttpRequest(); }
else
{ xhttp=new ActiveXObject("Microsoft.XMLHTTP"); }
```

_____ **1.**

_____ **2.**

```
return xhttp.responseXML;
}
```

<u>Example 1: Read the code, look at the output and then provide the missing code</u>

```
<!DOCTYPE html><html><head>
<script src="loadxmldoc.js">
</script></head>
<body><script>
xmlDoc=loadXMLDoc("books.xml");
document.write("Number of book nodes: ");
```

_____ **3.**

```
document.write("<br>");
//Remove the first book
```

_____ **4.**

_____ **5.**

```
document.write("Number of book nodes after removing the first
book: ");
```

_____ **6.**

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

Output
Number of book nodes: 4
Number of book nodes after removing the first book: 3

Example 2: Read the code, look at the output and then provide the missing code

```
<!DOCTYPE html><html><head>
<script src="loadxmldoc.js"> </script>
</head><body><script>
xmlDoc=loadXMLDoc("books.xml");
x=xmlDoc.getElementsByTagName('book');
```

_____ **7.**

```
document.write("<br>");
document.write("Removing category attribute of the first book");
```

_____ **8.**

_____ **9.**

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

Output
Book 1 – category: cooking
Removing category attribute of the first book
Book 1 – category: null

Example 3: Read the code, look at the output and then provide the missing code

```
<!DOCTYPE html><html><head>
<script src="loadxmldoc.js">
</script></head><body><script>
```

```
xmlDoc=loadXMLDoc("books.xml");
newNode=xmlDoc.createElement("book");
```

_____ **10.**

```
document.write("Book elements before: " + _____ ); **11.**
document.write("<br>");
```

_____ **12.**

_____ **13.**

_____ **14.**

```
document.write("Book elements after: " + _____ ); **15.**
</script></body></html>
```

Output
Book elements before: 4
Book elements after: 5

PHP QUESTIONS [20 POINTS]

[10 points] Below is one example of the output of the program show_vars.php, a program that prints the PHP environment variables and the POST and GET name=value pairs. Following the output is the actual PHP source code, <u>with some of the code removed.</u> Please provide the missing code.

$_SERVER	$_POST	$_GET

DOCUMENT_ROOT: /var/local/www/htdocs
HTTP_ACCEPT: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
HTTP_ACCEPT_ENCODING: gzip, deflate
HTTP_ACCEPT_LANGUAGE: en-US,en;q=0.5
HTTP_CONNECTION: keep-alive
HTTP_COOKIE: __utma=185748653.285999088.1365278272.1380911712.1380922899.12;
__utmz=185748653.1380911712.11.5.utmcsr=www-
scf.usc.edu|utmccn=(referral)|utmcmd=referral|utmcct=/~csci571/2013Fall/lynda.html;
__unam=304c066-13dea736b4b-47b5ef49-13; soc_textsize=small; desktopCookie=uschomepage;
__utmc=185748653
HTTP_HOST: www-scf.usc.edu
HTTP_REFERER: http://www-scf.usc.edu/~csci571/special.html
HTTP_USER_AGENT: Mozilla/5.0 (Windows NT 6.1; WOW64; rv:24.0) Gecko/20100101 Firefox/24.0
PATH: /usr/bin:/usr/sbin:/sbin:/usr/lsd/sbin:/usr/lsd/etc:/usr/lsd/bin:/usr/ucs/bin:/usr/
spac/bin:/usr/usc/etc:/usr/usc/bin:/usr/usc/X/bin:/usr/usc/X11/bin:/usr/lib/nis:/usr/lib/n
etsvc/yp:/usr/ccs/bin
REMOTE_ADDR: 76.89.147.160
REMOTE_PORT: 49818
SCRIPT_FILENAME: /home/scf-22/csci571/public_html/Special/php_ex/show_vars.php
SCRIPT_URI: http://www-scf.usc.edu/~csci571/Special/php_ex/show_vars.php
SCRIPT_URL: /~csci571/Special/php_ex/show_vars.php
SERVER_ADDR: 68.181.201.23
SERVER_ADMIN: webadm@usc.edu
SERVER_NAME: www-scf.usc.edu
	empty	empty

```
SERVER_PORT:  80
SERVER_SIGNATURE:
Apache/1.3.31 Server at www-scf.usc.edu Port 80

SERVER_SOFTWARE:  Apache/1.3.31 (Unix) PHP/4.3.9 mod_layout/3.0.3
UNIQUE_ID:  Uk@TEES1yRcAADLrIYQ
GATEWAY_INTERFACE:  CGI/1.1
SERVER_PROTOCOL:  HTTP/1.1
REQUEST_METHOD:  GET
QUERY_STRING:
REQUEST_URI:  /%7Ecsci571/Special/php_ex/show_vars.php
SCRIPT_NAME:  /~csci571/Special/php_ex/show_vars.php
PATH_TRANSLATED:  /home/scf-22/csci571/public_html/Special/php_ex/show_vars.php
PHP_SELF:  /~csci571/Special/php_ex/show_vars.php
argv:  Array
empty
argc:  0
```

- A form with method = POST

First Name [_____]

Last Name [_____]

[Submit]

- A form with method = GET

First Name [_____]

Last Name [_____]

[Submit]

Source code for show_vars.php

```php
<!doctype html><html>
<head><title>Show $_SERVER, $_POST, $_GET
Variables</title></head>
<style type="text/css">
th {   text-align:left;}
</style>
<body>
<?php
    function print_tabs($tabs) {

            for($i = 0; $i < _____ ; $i++) {   1.
                echo "     ";
            }
    }
    function print_array($arr, $tabs = 0) {
            if(!empty($arr)) {
```

```
                    foreach($arr as $k=> $v) {
                            print_tabs($tabs);

                            echo _____ "<br/>";    2.
                            if(is_array($v)) {
                                    print_array($v, $tabs+1);
                            }
                    }
              } else { echo "empty";            }
        }
?>
<table border='1'>
<tr><th width="33%">$_SERVER</th><th width="34%">$_POST</th><th
width="33%">$_GET</th></tr>
        <tr>
<td valign="top">  <?php _____?>  </td>      3.

<td valign="top">  <?php _____?>  </td>      4.

<td valign="top">  <?php _____ ?>  </td>      5.
        </tr>  </table>
<ul>
        <li><a href="?fname=Hello&lname=World">A form with method
= POST</a>
        <div>
        <form method="POST" action="">
        <p>
         <label for="fname">First Name</label>
         <input type="text" value="" name="fname">
        </p>
        <p>
         <label for="lname">Last Name</label>
         <input type="text" value="" name="lname">
        </p>
        <p><input type="submit" value="Submit" name="submit"></p>
</form>        </div></li>
        <li><a href="?fname=Hello&lname=World">A form with method
= GET</a>
        <div>
        <form method="GET" action="">
        <p>
        <label for="fname">First Name</label>
        <input type="text" value="" name="fname">
        </p>
        <p>
        <label for="lname">Last Name</label>
        <input type="text" value="" name="lname">
```

```
</p><p><input type="submit" value="Submit" name="submit"></p>
</form>        </div></li></ul>
</body></html>
```

[10 points] Complete the PHP code below which checks if an array element is a
female name and puts the "Mrs." Prefix. Otherwise it puts the "Mr." prefix,
producing the listed output.

```php
//declare an array of names
$names=array();

$message="Hello ";
$prefix1="Mr. ";
$prefix2="Mrs. ";

$names[0]="John";
$names[1]="George";
$names[2]="James";
$names[3]="Anna";
$names[4]="Robert";
$names[5]="John";
$names[6]="James";
$names[7]="George";
$names[8]="Maria";
$names[9]="Peter";
$names[10]="James";
print('<br>The sort function sorts array<br>');
sort($names);

//Get size of array
$asize=sizeof($names);

    for(_____)
    {
       if(_____    )
       {
           _____

       }
       else
       {

           _____
```

```
      }
   }
print('<br>');
```

Output:
```
The sort function sorts an array
Hello Mrs. Anna
Hello Mr. George
Hello Mr. George
Hello Mr. James
Hello Mr. James
Hello Mr. James
Hello Mr. John
Hello Mr. John
Hello Mrs. Maria
Hello Mr. Peter
Hello Mr. Robert
```

JAVASCRIPT REGULAR EXPRESSIONS QUESTIONS [10 POINTS]

Q1. [5 points] Describe in one sentence what does the pattern checks for a match:

```
var pattern = /(^-*\d+$)|(^-*\d+\.\d+$)/
```

A1.

Q2. [5 points] Describe in one sentence what does the pattern checks for a match:

```
var pattern = /^[0-9]{3}[\-]?[0-9]{2}[\-]?[0-9]{4}$/;
```

A2.

WEB SERVER QUESTIONS [10 POINTS]

Below is a replica of an actual httpd.conf file from a real website. Each line has been numbered. Answer the questions immediately after the end of the file. Each question is worth 2 points.

```
1.  ################################
2.  ### General Settings
3.  ################################

4.  ServerType standalone
5.  ServerRoot "/usr/local/apache"
6.  PidFile "/var/run/httpd.pid"
7.  ScoreBoardFile "/var/log/apache/httpd.scoreboard"
8.  Timeout 300
9.   KeepAlive On
10. MaxKeepAliveRequests 100
11. KeepAliveTimeout 15
12. MinSpareServers 10
13. MaxSpareServers 20
14. StartServers 10
15. MaxClients 256
16. MaxRequestsPerChild 0
17. Port 80
18. HostnameLookups Off
19. ServerSignature Off
20. ErrorDocument 403 /link_error.php
21. ErrorDocument 404 /link_error.php
22. ErrorDocument 500 /link_error.php
23. User nobody
24. Group nobody
25. ServerAdmin webmaster@mp3xyz.com
26. ServerName SERVER-IP
27. NameVirtualHost SERVER-IP
28. DocumentRoot "/usr/local/apache/htdocs"
29. ServerTokens ProductOnly

30. Include conf/vhosts.conf
31. Include conf/vhosts_ssl.conf

32. #LoadModule sql_log_module     libexec/mod_log_sql.so
33. LoadModule php5_module         libexec/libphp5.so

34. <Directory "/usr/local/apache/htdocs">
35. Options FollowSymLinks
36. AllowOverride None
37.     Order deny,allow
38.     Allow from all
39. </Directory>

40. ScriptAlias /cgi-bin/ "/usr/local/apache/cgi-bin/"

41. <Directory "/usr/local/apache/cgi-bin">
42.     AllowOverride None
43.     Options +ExecCGI
```

```
44.      Order allow,deny
45.      Allow from all
46. </Directory>

47. <Files ~ "^\.ht">
48.      Order allow,deny
49.      Deny from all
50.      Satisfy All
51. </Files>

52. DirectoryIndex index.html index.php


53. LogLevel warn
54. LogFormat "%h %l %u %t \"%r\" %>s %b \"%{Referer}i\" \"%{User-Agent}i\"
\"%{Cookie}i\"" combined
55. LogFormat "%h %l %u %t \"%r\" %>s %b" common
56. LogFormat "%{Referer}i -> %U" referer
57. LogFormat "%{User-agent}i" agent

58. ErrorLog /var/log/apache/error_log
59. CustomLog /var/log/apache/access_log combined env=!attacks
60. CustomLog /var/log/apache/attack_log combined env=attacks

61. TypesConfig /usr/local/apache/conf/mime.types
62. DefaultType text/plain

63. AddEncoding x-compress Z
64. AddEncoding x-gzip gz tgz
65. AddType application/x-tar .tgz
66. AddType application/x-httpd-php .php
67. AddType application/x-httpd-php-source .phps


68. BrowserMatch "Mozilla/2" nokeepalive
69. BrowserMatch "MSIE 4\.0b2;" nokeepalive downgrade-1.0 force-response-1.0
70. BrowserMatch "RealPlayer 4\.0" force-response-1.0
71. BrowserMatch "Java/1\.0" force-response-1.0
72. BrowserMatch "JDK/1\.0" force-response-1.0

73. <Location /server-status>
74. SetHandler server-status
75. Order Deny,Allow
76. Deny from all
77. Allow from 10.0.0.0/24
78. Allow from 192.168.0.0/16
79. Allow from 172.16.200.0/16
80. </Location>
```

Answer the following questions:

Q1: What is the purpose of lines 40 – 46?

A1:

Q2: On startup how many copies of the server are created

A2:

Q3: What is the purpose of lines 73 – 80?

A3:

Q4: What is the purpose of line 9?

A4:

Q5: What is the purpose of lines 20, 21 and 22?

A5:

CSS QUESTIONS [16 POINTS]

Below are lines extracted from the CSS style sheet of microsoft.com and bing.com. For each line answer the question. Each question is worth 4 points.

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

```
#sh_rdiv a {position:relative;
float:left;display:block;
text-decoration:none;cursor:default;outline:none}
```

A1.

Q2. What does this declaration do?

```
.hpVpv_Tile_home_theme a,.hpVpv_TilePanel {
background-color:#0072bc; border-color:#fff; color:#fff;
font-family:Segoe UI Light,SegoeUI,Tahoma,Arial,Verdana,sans-serif}
```

A2.

Q3. Give two (2) HTML examples of usage of the declaration from Q2:

A3.

Q4. Write in the CSS to create a "class" named hidden **that changes the CSS properties** display **to none,** height **to 0,** width **to zero and** overflow **to hidden.**

A4.

LYNDA.COM QUESTIONS [4 POINTS]

Each Question is worth 2 points.

Q1: What are `.reverse(), .join()` and `.sort(),` methods of?

A1:

Q2: During a 3-way handshake, what is the likely reason of no response?

A2: