

Final Exam - E-Technologies

Name _____

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1 Define the following. Acronym expansion is good, but provide more.

1.1 MIME

1.2 XHTML

1.3 In perl, <STDIN>

1.4 In perl, @_

1.5 In perl, =~

1.6 In perl, \$!

1.7 CGI.pm

1.8 DOM

1.9 PKI

1.10 JSP

1.11 servlet

1.12 DTD

1.13 Namespaces

1.14 SQL

1.15 Metadata

1.16 Semantic web

1.17 SOAP

1.18 SSI

1.19 BizTalk

1.20 WAP/WML

1.21 XPath

1.22 P3P

1.23 CDATA

1.24 UDDI

1.25 Web services

1.26 PHP

1.27 XSQL

1.28 Servlet container

1.29 HTTPServlet

1.30 CLOB

1.31 WEB-INF

2 Provide documentation (annotation) below for all CSS features.

```
<html>
<head>
  <title> Font properties </title>
  <style type = "text/css">
    p.big {font-size: 14pt;
          font-style: italic;
          font-family: 'Times New Roman';
          }
    p.small {font-size: 10pt;
            font-weight: bold;
            font-family: 'Courier New';
            }
  -->
</style>
</head>
<body>
<p class = "big">
If a job is worth doing, it's worth doing right.
</p>
<p class = "small">
Two wrongs don't make a right, but they certainly
can get you in a lot of trouble.
</p>
<h2 style = "font-family: 'Times New Roman';
           font-size: 24pt; font-weight: bold">
Chapter 1 Introduction
</h2>
<h3 style = "font-family: 'Courier New';
           font-size: 18pt">
1.1 The Basics of Computer Networks
</h3>
</body>
</html>
```

3 In perl:

Explain the shift, unshift, pop, and push operators.

Provide examples of each.

4 In JavaScript, describe the two ways an Array object can be created.

5 Compare the features and weaknesses of the following three programming environments. Include in your answer the ideal situations when you would use each.

Perl/CGI

Javascript

Java Servlets

6 In the following program, 1) complete the comment lines (in bold), and 2) provide annotation on for individual lines of code (you can exclude the print statements)

```
#!/usr/local/bin/perl
```

```
# This program does the following:
```

```
print "Content-type: text/html\n\n";  
print "<html><head>\n";  
print "<title> Display query string data </title></head> \n";  
print "<body>\n";
```

```
# The following if/elsif/else does:
```

```
$request_method = $ENV{'REQUEST_METHOD'};  
if ($request_method eq "GET") {  
    $query_string = $ENV{'QUERY_STRING'};  
}  
elsif ($request_method eq "POST") {  
    read(STDIN, $query_string, $ENV{'CONTENT_LENGTH'});  
}  
else {  
    print "Error - request method is illegal \n";  
}
```

```
# Next the program does:
```

```
@name_value_pairs = split(/&/, $query_string);
```

```
# Next the program does:
```

```
foreach $name_value (@name_value_pairs) {  
    ($name, $value) = split (/=/, $name_value);  
    $value =~ tr/+/ /;  
    $value =~ s/%([\dA-Fa-f][\dA-Fa-f])/pack("C", hex($1))/eg;  
    print "The next name/value pair is: $name, $value \n";  
}
```

```
# Finally the program does:
```

```
print "</body> </html> \n";
```

7 In the following program, 1) complete the comment lines (in bold), and 2) provide annotation on for individual lines of code (you can exclude the write statements)

<!-- This program does the following:

```
-->
<html><head><title> Phone number tester </title>
<script language = "JavaScript">
/* Function tst_phone_num
Parameter:
Result: Returns ...

*/
function tst_phone_num(num) {
// The following code ...

    var ok = num.search(/^\d{3}-\d{4}/);
    if (ok == 0)
        return true;
    else
        return false;
    } // end of function tst_phone_num
</script></head>
<body><script language = "JavaScript">
/* Script that does ...

*/
var tst = tst_phone_num("444-5432");
if (tst)
    document.write("444-5432 is a legal phone number", "<br/>");
else
    document.write("Error in tst_phone_num", "<br/>");
tst = tst_phone_num("444-r432");
if (tst)
    document.write("Error in tst_phone_num", "<br/>");
else
    document.write("444-r432 is not a legal phone number", "<br/>");
tst = tst_phone_num("44-1234");
if (tst)
    document.write("Error in tst_phone_num", "<br/>");
else
    document.write("44-1234 is not a legal phone number", "<br/>");
</script></body></html> >
```

8 Describe how "event handling" is dealt with in Javascript

9 Describe the different methods in which XML files and/or data can be stored in a database. For each method describe the techniques that could be used to get the data in and out of the database.

10 Provide documentation (annotation) below for the two files: include a summary of what it does AND a line-by-line annotation:

10.1 FAQ-In-Email.xml

```
<?xml version="1.0"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="text"/>
  <xsl:template match="/">
    <xsl:text>Hello,&#xa;&#xa;</xsl:text>
    <xsl:text>Here is your daily email dose of FAQ...</xsl:text>
    <xsl:for-each select="ROWSET/ROW">
      <xsl:text>&#xa;&#xa;Question </xsl:text>
      <xsl:value-of select="position()"/>
      <xsl:text>: </xsl:text>
      <xsl:value-of select="QUESTION"/>
      <xsl:text>&#xa;  Answer: </xsl:text>
      <xsl:value-of select="ANSWER"/>
    </xsl:for-each>
  </xsl:template>
</xsl:stylesheet>
```

10.2 FAQEMail.xsql

```
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="FAQ-In-Email.xml"?>
<xsql:include-xsql href="FAQ.xsql" xmlns:xsql="urn:oracle-xsql"/>
```

10.3 How are the above two files related?

11 Draw a concept map of the key ideas you learned in this course.

- 12 Sarnoff's law states that the value of a network is proportional to "N", the size of the network. This law applies to broadcast networks. Metcalfe's Law states that the value of a network is proportional to " N^2 ", the size of the network squared. For example, a network of fax machines of size one, has little value, but as the number of fax machines grows the value of the entire network of fax machines grows at N^2 . Reed's Law states that the value of a network is proportional to 2^N . For example, the number of special interest groups that could be formed out of N people is 2^N . This may suggest why e-Bay, is so successful. In a quote from Reed: "e-Bay won because it facilitated the formation of social groups specific to interests. Social groups form around people who want to buy or sell teapots or antique radios. ... I realized that millions of computers added another important property --- the ability of the people to network to form groups. ... I saw that the value of [such group forming networks] grows even faster --- much, much, faster --- than the networks where Metcalfe's law holds true. Reed's law shows that the value of the network grows proportional not to the square of the users, but exponentially." Discuss the above in the context of the technologies covered in this course.