

**CS 665 Information Delivery on the Internet Exam 1 - Name: \_\_\_\_\_**  
**Fall 2003**

**Part 1: (39 points - 3 points for each problem)**

- ( B ) 1. What protocol is widely used by all Web communications?  
(A) NNTP (B) HTTP (C) FTP (D) PPP
- ( C ) 2. Which statement about the IP address is incorrect?  
(A) It is a unique 32-bit number. (B) It is written as four 8 bit numbers, separated by periods.  
(C) For each IP address, there is a corresponding domain name. (D) None of above
- ( D ) 3. The default port for the HTTP server is:  
(A) 22 (B) 25 (C) 70 (D) 80
- ( A ) 4. Which is a Web server?  
(A) IIS (B) Internet Explorer (C) Mozilla (D) lynx
- ( C ) 5. If we want some text to appear in boldface, which tag should be used?  
(A) <bold> (B) <bd> (C) <b> (D) <bf>
- ( B ) 6. Which attribute of the tag, <img />, is used to specify text for the image?  
(A) src (B) alt (C) text (D) txt
- ( D ) 7. Which tag is used to specify the term to be defined in the definition list?  
(A) <df> (B) <dl> (C) <dd> (D) <dt>
- ( D ) 8. Which predefined variable in Perl has the value of the system variable **errno**?  
(A) @\_ (B) \$\_ (C) \$\$ (D) \$!
- ( C ) 9. How do you get the value of the reference variable \$fruit?  
(A) \ \$fruit (B) &\$fruit (C) \$\$fruit (D) /\$fruit
- ( A ) 10. Which function is used to specify the local variable?  
(A) my (B) home (C) define (D) private
- ( C ) 11. How is an ampersand sign encoded in a query string? Its decimal ASCII value is 38.  
(A) %38 (B) @38 (C) %26 (D) %28
- ( B ) 12. How does a Perl program includes the CGI Perl module and use standard symbols?  
(A) include CGI ":standard"; (B) use CGI qw(:standard); (C) use CGI :standard; (D) None of above
- ( A ) 13. How do you get the documentation of the CGI.pm module?  
(A) perldoc CGI (B) perldoc -d CGI (C) perldoc -f CGI (D) perldoc -h CGI

**Part 2: (61 points)**

1. Briefly explain these terminologies. If they are acronyms, also write what they stand for. (12 points)
- (a) **DNS** The domain name system is the way that Internet domain names are located and translated into Internet Protocol (IP) addresses.
  - (b) **URL** A Uniform/Universal Resource Locator is used to identify the address of a document (resource) on the Internet.
  - (c) **XML** The eXtensible Markup Language is a language designed to create markup languages with their own specification.
  - (d) **CGI** The Common Gateway Interface is the interface between a browser and software on the server.

2. Describe the five most commonly used HTTP request methods. (10 points)

Ans:

GET	Return the contents of the specified document
HEAD	Return the header information for the specified document
POST	Execute the specified document, using the enclosed data
PUT	Replace the specified document with the enclosed data
DELETE	Delete the specified document

3. What are the three categories of Perl variables? Give an example of how values can be assigned for each type of variables. (6 points)

Ans:

Scalar variables: \$name = 2,

Array: @list = (2, 3),

Hash: %ages = ("John" => 33, "Tom" => 17).

4. Give one example for pass-by-value and one for pass-by-reference in Perl? (6 points)

Ans:

```
my ($a, $b) = (2, 3);
```

```
swop($a, $b);
```

```
swap(\$a, \$b);
```

```
sub swop { # Call-by-value
```

```
    my ($a, $b) = @_;
```

```
    $temp = $a;
```

```
    $a = $b;
```

```
    $b = $temp;
```

```
}
```

```
sub swap { # call-by-reference
```

```
    my ($c, $d) = @_;
```

```
    $temp = $$c;
```

```
    $$c = $$d;
```

```
    $$d = $temp;
```

```
}
```

5. Consider the following Perl code. Write the results after running this code. (6 points)

```
@list = (10, 2, 7, 6, 9);
```

```
push @list, (4, 8);
```

```
$len = @list;
```

```
print "$len \n";
```

```
print "$#list \n";
```

```
$val = shift @list;
```

```
print "$val \n";
```

Ans:

7

6

10

6. Write a Perl Program that reads in and process a text file in the following way:

- (a) transform the text within the double quote pair into uppercase letters,
- (b) change the ending period sign (.) within the double quote pair to the exclamation sign (!).

For example, the program converts I said, "Hello." to I said, "HELLO!". (9 points)

```
#!/usr/bin/perl -w
while(<>) {
    s/"([\^"]+)\.\s*"/'".uc($1).'!"/ge;
    print;
}
```

7. (a) Write a HTML document with a text input form to collect the user's name. This HTML document will request a CGI program `thanks.pl` in the `cgi` directory of your account at `kirk.cs.wichita.edu:6550`.
- (b) Write the CGI program `thanks.pl` that stores the user's name into a file `name.dat` and returns a thanks message with the user's name to the user's browser.

Hint: Use the following functions in CGI.pm: `param()`, `header()`, `start_html()`, and `end_html()`. (12 points)

Ans:

(a) `<html>`  
`<head>`  
`<title>HTML to call the CGI-Perl program thanks.pl</title>`  
`</head>`  
`<body>`  
`<form action = "http://kirk.cs.wichita.edu:6550/cgi/cs655/thanks.pl"`  
`method = "POST">`  
`<input type = "text" name = "name" size = "20">`  
`<input type = "submit" value = "Submit">`  
`</form>`  
`</body>`  
`</html>`

(b) `#!/usr/bin/perl -w`  
`# thanks.pl - a CGI program that stores the name into name.dat and`  
`# returns a thanks message to the user`

```
use CGI qw(:standard);

open (OUT, ">name.dat");
my $name = param("name");
print OUT "$name\n";
print header();
print start_html("Thank You");
print "$name! Thanks You!";
print end_html();
```