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

( b ) 1. What protocol is widely used by all computer connections to the Internet?
   (a) HTTP (b) TCP/IP (c) FTP (d) PPP

(b) 2. Which is a fully qualified domain name?
   (a) cs.twsu.edu (b) kirk.cs.twsu.edu (c) kirk.cs.twsu (d) kirk.cs.twsu.edu:6550

(d) 3. The default port for the HTTP server is:
   (a) 22 (b) 25 (c) 79 (d) 80

(a) 4. Which one is not a Web browser?
   (a) Apache (b) Netscape Navigator (c) Mozilla (d) lynx

(c) 5. If we want some text to appear in a monospace font, which tag will be used?
   (a) `<ms>` (b) `<sp>` (c) `<tt>` (d) `<i>`

(a) 6. What is the one required attribute of an `<img />` tag?
   (a) src (b) size (c) valign (d) align

(c) 7. What tag is used to define the terms in a definition list?
   (a) `<df>` (b) `<dl>` (c) `<dt>` (d) `<dd>`

(b) 8. Which one is the default scalar variable in Perl?
   (a) @ (b) $ (c) $$ (d) $!

(a) 9. How do you get the address of the scalar variable $fruit?
   (a) \$fruit (b) &$fruit (c) $$fruit (d) /$fruit

(c) 10. Which function is used to specify the local variable?
   (a) local (b) static (c) my (d) private

(d) 11. How is a space encoded in a query string? Its decimal ASCII value is 32.
   (a) @32 (b) %32 (c) @20 (d) %20

(d) 12. How does a Perl program specify that it needs to access the CGI module?
   (a) include CGI; (b) define CGI; (c) access CGI; (d) use CGI;

(c) 13. How do you get the documentation of the function flock?
   (a) perldoc flock (b) perldoc -d flock (c) perldoc -f flock (d) perldoc -h flock

Part 2: (61 points)

1. Briefly explain these terminologies. If they are acronyms, also write what they stand for. (12 points)
   (a) MIME The Multi-purpose Internet Mail Extensions is an extension used to exchange different kinds of data files on the Internet: audio, video, images, application programs
   (b) HTTP The HyperText Transfer Protocol provides a standard form of communications between browsers and Web servers.
   (c) XHTML The Extensible Hypertext Markup Language is the set of markup symbols or codes inserted in a document to make it displayable on the World Wide Web. It is an application of the Extensible Markup Language (XML).
   (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:
3. What are the three categories of Perl variables? Give an example for each case. (6 points)

Ans: Scalar variables: $name, Arrary: @list, Hash: %ages

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

Ans:

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

sub swop { # Call-by-value
    my ($a, $b) = @_; # Call-by-reference
    $temp = $a;
    $a = $b;
    $b = $temp;
}

sub swap { # call-by-reference
    my ($c, $d) = @_; # Call-by-value
    $temp = $$c;
    $$c = $$d;
    $$d = $temp;
}
```

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

```perl
@list = (10, 2, 7, 6, 9);
unshift @list, (4, 8);
$len = @list;
print "$len \n";
print "$#list \n";
$val = pop @list;
print "$val \n";
```

Ans:

7
6
9

6. Write a Perl Program to read in a HTML document and transforms all HTML tags to lowercase letters. For example, convert <LI> to <li>. (9 points)

Ans:

```perl
#!/usr/bin/perl -w
while(<>) {
    s/\<([^>]\+)>)/l$c($1)/eg;
    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 `reply.pl` in the `cgi-bin` directory of your account at kirk.cs.twsu.edu:6550.

(b) Write the CGI program `reply.pl` that returns a greeting with the user's name to the user. Hint: Use the following functions in CGI.pm: `param()`, `header()`, `start_html()`, and `end_html()`.

(12 points)

Ans:

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

(b) 
```perl
#!/usr/bin/perl -w
# reply.pl - a CGI program that returns a greeting to the user

use CGI qw(:standard);

my $name = param("name");
print header();
print start_html("Greeting");
print "$name! Greetings from your Web server!";
print end_html();
```