ITS332 – Quiz 2

Name: _____

ID: _____ Mark: _____ (out of 10)

Question 1 [3 marks]

Match the C Internet socket function to the appropriate description of the function. The socket functions are: accept, bind, connect, listen, socket, write, read.

a) _____ creates an endpoint for communication with another computer

b) _____ blocks until a TCP SYN segment is received

c) _____ blocks until a TCP data segment is received

Question 2 [2 marks]

Consider the following files on a computer using Ubuntu Linux and acting as a router and web server:

1. /etc/apache2/sites-available/default
2. /etc/apache2/passwd/passwords
3. /var/log/apache2/access.log
4. /var/www/index.html
5. /proc/sys/net/ipv4/ip_forward
6. /home/network/Desktop/index.html

a) In which file could you find the IP addresses of computers that have accessed the web server?

b) Which file would you modify to ensure users (of web browser) would required to enter a username/password if accessing any file in the web server?

Question 3 [3 marks]

Consider the following entry from a web server log (this is a single entry;):

124.121.140.212 - - [12/Feb/2009:19:19:49 +0700] "GET /~steven/its413/index.html HTTP/1.1" 200 2886 "http://ict.siit.tu.ac.th/~steven/index.html" "Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 5.1)"

a) Do you know the IP address that the computer of the web browser used? If yes, what is it?

b) Do you know the domain name of the web server? If yes, what is it?

c) Do you know the URL that was requested by the web browser? If yes, what is it?

Question 4 [2 marks]

Answer the questions about the following example code segment for a server program:

```
while (1) {
      newsockfd = accept(sockfd, (struct sockaddr *) &cli_addr, &clilen);
      if (newsockfd < 0) error("ERROR on accept");
      pid = fork();
      if (pid < 0) error("ERROR on fork");
      if (pid == 0)  {
            close(sockfd);
            handlerequest(newsockfd, client_address);
            exit(0);
      }
      else {
            close(newsockfd);
      }
}
```

Assume the process that is initially created when the program is executed is the parent server process. Also assume no errors occur.

a) The parent server process that executes the program will:

i. Execute the handlerequest() function if a connection from a client is accepted

ii. Create a new child process when accept() function is called.

iii. Loop continuously, exiting only when the handlerequest() function has completed.

iv. Create a new child process for each connection request it accepts.

v. None of the above.

b) If the handlerequest() function takes 10 seconds to execute, then:

i. A second client cannot connect to the server within those 10 seconds

ii. Clients can only connect to the server at a rate of 1 connection per 10 seconds

iii. The rate at which clients can connect to the server is independent of the duration of handlerequest()

iv. An error will occur if a second client connects to the server within those 10 seconds

v. None of the above.