

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) _____ triggers a TCP SYN segment to be sent
- b) _____ creates an endpoint for communication with another computer
- 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) Which file would you modify to change the computer from a router to a host?
- b) Which file would you modify to ensure users (of web browser) would be 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.siiit.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 previous page that the web browser visited? If yes, what is it?
- c) Do you know the size of the response sent by the web server? 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);
        handlerrequest(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 `accept()` function:
 - i. Initiates a TCP connection to the client.
 - ii. Is a non-blocking function.
 - iii. Will block until a TCP connection request is received by the client.
 - iv. Will be executed by the child server process, not the parent service process.
 - v. None of the above.
- b) If the `handlerrequest()` 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 `handlerrequest()`
 - iv. An error will occur if a second client connects to the server within those 10 seconds
 - v. None of the above.