

## 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) 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 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 port number that 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) Did the requested file exist on the server? Explain how you know the answer.

**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 parent server process that executes the program will:
  - i. Execute the handlerrequest() 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 handlerrequest() function has completed.
  - iv. Create a new child process for each connection request it accepts.
  - 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.