UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2014/ 2015

COURSE NAME	:	CLIENT SERVER PROGRAMMING
COURSE CODE	:	BIT 32803
PROGRAMME	:	3 BIT
EXAMINATION DATE	:	JUNE 2015 / JULY 2015
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

Q1 (a) Explain the concept of Client/Server. Give **ONE (1)** example of client/server application.

(4 marks)

(b) Give **TWO (2)** advantages of three-tier programming.

(6 marks)

Q2 (a) Explain each of the following client/server terminologies :

(i) SOCK_STREAM

(4 marks)

(ii) ORBIX

(4 marks)

(iii) MDX

(4 marks)

(iv) IDL

(4 marks)

(v) IIOP

(4 marks)

(b) Illustrate with suitable diagram for following terms:

(i) ODBC

(8 marks)

(ii) Static Invocation

(8 marks)

Q3 (a) Handshake is necessary for reliable delivery of packets.

(i) Explain on how to establish a TCP connection involving the exchange of 3 packets (three-ways handshake).

(6 marks)

(ii) Why is a 3-way handshake used and not 2-way or 4-way?

(3 marks)

(b) Describe the network traffic that results from a call to connect() on a TCP socket. Assume the destination address given to connect() is valid (there is a TCP server waiting at the specified address).

(5 marks)

(c) Describe how to provide a reliable message-oriented service using UDP.

(5 marks)

(d) Describe how the TELNET protocol provides both control information and data over a single TCP connection.

(5 marks)

Q4 Write **TWO (2)** programs called client.php and `server.php` using criteria listed in **Figure Q4(a)** to produce output as in **Figure Q4(b)**.

```
Client's IP address : 161.10.15.90
Server's IP address : 161.10.1.1
Port for communication : DO NOT use (1) well known ports or (2) registered ports
Only allow 5 simultaneous clients' connections.
Use UDP protocol
Read data of maximum size of 256 bytes
No buffer
Limit the service to 3 hours only
Messages from client will starts with "<message from client>"
Messages from server will starts with "<message from server>"
```

Figure Q4(a)

```
server.php

This is server MAIN screen
….waiting for CLIENT request
<message from client> Client ONE is connected
Connection closed ...


client.php

This is client's ONE screen
<message from server> You are now connected to server MALIQUE!
Already connected to server
Connection closed ...
```

Figure Q4(b)

(20 marks)

Q5 (a)   Explain how an HTTP 1.1 server know when it has reached the end of a *complete* HTTP/1.1 request?

(5 marks)

(b)   Given the following statement:

```
HTML form with action "http://foo.com/blah.cgi", the method set to "GET",
form fields with names "id" and "nickname", and the user types in the string
"jones" in the id textbox, and the string "1337 dude" as the nickname.
```

Show a valid HTTP 1.1 request that could be sent by the browser when the user submit the form (a complete request is required).

(5 marks)

-END OF QUESTION-