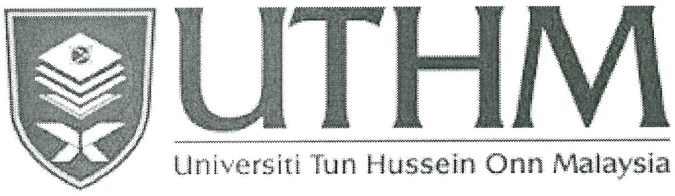

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2013/ 2014

COURSE NAME	:	CLIENT SERVER PROGRAMMING
COURSE CODE	:	BIT32803
PROGRAMME	:	3 BIT
EXAMINATION DATE	:	DECEMBER 2013 / JANUARY 2014
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER **ALL** QUESTIONS

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

Q1 (a) Explain the concept of client server with an example.

(2 marks)

(b) Give **TWO(2)** differences between fat client and fat server.

(4 marks)

(c) Explain **TWO(2)** advantages of tier programming.

(2 marks)

Q2 (a) Explain the function of:

(i) `IMAP`

(2 marks)

(ii) `POP`

(2 marks)

(iii) `LDAP`

(2 marks)

(iv) `Socket`

(2 marks)

(v) `IMAP over SSL`

(2 marks)

(b) Explain **FIVE(5)** tranparencies in distributed system.

(10 marks)

Q3 With appropriate diagram, propose suitable solutions for the following issues in client server communication:

(a) Blocking

(5 marks)

(b) Buffering

(5 marks)

(c) Reliability

(5 marks)

(d) Server Architecture

(5 marks)

Q4 (a) Explain when to use `urn` and `url`.

(2 marks)

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

(5 marks)

(c) Given the following statement:

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

Show a valid HTTP 1.1 request that could be sent by the browser when the user submits a complete request form.

(5 marks)

Q5 (a) You had been assigned to develop a client server application that has performance boost and additional flexibility by a company.

(i) Suggest a good socket type for your application based on request features.

(2 marks)

(ii) Justify your answer in **Q5(a)(i)**.

(6 marks)

(b) A company has hired you to develop a web based application. It must have sufficient security elements to protect the users and the server data.

(i) Proposed security elements to be used in this application.

(4 marks)

(ii) Justify your answer in **Q5(b)(i)**.

(8 marks)

Q6 Write **TWO(2)** programs called `client` and `server` using criteria listed in Figure **Q6(a)** to produce output as in Figure **Q6(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 Q6(a)

server

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

client

```
This is client's ONE screen
<message from server> You are now connected to server BIT32803!
Already connected to server
Connection closed ...
```

Figure Q6(b)

(20 marks)

-END OF QUESTION-