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**UNIVERSITI TUN HUSSEIN ONN
MALAYSIA**

**FINAL EXAMINATION
SEMESTER 1
SESSION 2011/ 2012**

COURSE NAME : CLIENT SERVER PROGRAMMING

COURSE CODE : BIT 3283 / BIT 32803

**PROGRAMME : BACHELOR OF INFORMATION
TECHNOLOGY**

EXAMINATION DATE : JANUARY 2012

DURATION : 3 HOURS

INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF FOUR (4) PAGES

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- Q1**
- (a) Explain what is Client/Server. Give **ONE (1)** example. (4 marks)
 - (b) Give **TWO (2)** differences of two-tier programming and three-tier programming. (3 marks)
 - (c) Give **TWO (2)** advantages of three-tier programming. (3 marks)
- Q2**
- (a) Define each of the following terms :
 - (i) SOCK_STREAM (2 marks)
 - (ii) ORBIX (2 marks)
 - (iii) MDX (2 marks)
 - (iv) IDL (2 marks)
 - (v) IIOP (2 marks)
 - (vi) DII (2 marks)
 - (b) Describe the following terms with suitable diagram :
 - (i) ODBC (10 marks)
 - (ii) Static Invocation (10 marks)
 - (c) Give **TWO (2)** comparisons for the following statements.
 - (i) MOM and RPC (4 marks)
 - (ii) DCOM and CORBA (4 marks)

- Q3**
- (a) Explain on how to establishing a TCP connection involves the exchange of 3 packets (three-ways handshake). Why is a 3-way handshake used and not 2-way or 4-way?
(5 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 you would go about providing a reliable message-oriented service using UDP.
(5 marks)
 - (d) Describe how the TELNET protocol provide both control information and data over a single TCP connection.
(5 marks)
- Q4**
- (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)

Q5 Write **TWO (2)** programs called `client.php` and `server.php` using criteria listed in **Figure Q5(a)** to produce output as in **Figure Q5(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 Q5(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 Q5(b)

(20 marks)