

ITS 323 – QUIZ 7A

First name: _____ Last name: _____

ID: _____

Total Marks: _____

out of 10

Question 1 [3 marks]

TCP at Host A sends 6 DATA segments, one immediately following another, to Host B. Each DATA segment has a transmission time of 10ms. Host B sends an ACK segment for each DATA segment received. Each ACK has a transmission time of 1ms. The one-way propagation time between A and B is 15ms. After transmitting an entire DATA segment, TCP starts a retransmission timer, with timeout value of 100ms.

If the third (3rd) DATA segment is lost, at what time does the retransmission of this DATA segment start if:

a) TCP Basic Retransmission is used (no Fast Retransmit)? [1 mark]

b) TCP Basic Retransmission and Fast Retransmit are used? [2 marks]

Question 2 [3 marks]

Multiple choice. Choose only one answer.

a) Which field in the TCP header is used for flow control?

- i. Sequence number
- ii. Acknowledgement number
- iii. Window
- iv. Urgent pointer

b) A Root DNS Server would most likely know the IP address of the DNS Server managing which domain?

- i. .com
- ii. .co.th
- iii. .ac.th
- iv. .root.com

- c) After setting up a connection with ISN=0, a TCP sender receives 10,000 bytes from the application, and divides the data into segments each with 2,500 bytes of data. What is the sequence number in the TCP header of the third segment?
- i. 2500
 - ii. 2501
 - iii. 5000
 - iv. 5001
 - v. 7500
 - vi. 7501

Question 3 [2 marks]

The following shows the contents of a HTTP Request message and the resulting HTTP Response message.

Request

```
GET /~steven/tul30/ HTTP/1.1
Host: ict.siit.tu.ac.th
User-Agent: Mozilla/5.0 (Windows) Gecko Firefox/3.0.2
Accept: text/html,application/xhtml+xml
Accept-Language: en-gb,en;q=0.7,th;q=0.3
Accept-Encoding: gzip,deflate
Accept-Charset: UTF-8,*
Keep-Alive: 300
Connection: keep-alive
Referer: http://ict.siit.tu.ac.th/~steven/
```

Response

```
HTTP/1.0 200 OK
Date: Thu, 25 Sep 2008 09:08:17 GMT
Server: Apache/2.2.4 (Ubuntu) PHP/5.2.3-lubuntu6.4
Last-Modified: Mon, 07 Jul 2008 09:07:14 GMT
ETag: "3c22ff-286c-66bf3480"
Accept-Ranges: bytes
Content-Length: 10348
Content-Type: text/html
X-Cache: MISS from proxy5.siit.tu.ac.th
X-Cache-Lookup: MISS from proxy5.siit.tu.ac.th:8080
Via: 1.0 proxy5.siit.tu.ac.th:8080 (squid/2.6.STABLE6)
Connection: keep-alive
```

```
<html xmlns="http://www.w3.org/1999/xhtml" >
<head>
<title>Integrated Science and Technology (TU 130)</title>
<link rel="StyleSheet" href="../css/site.css" type="text/css" />
</head>
<body>

<h1>Integrated Science and Technology (TU 130)</h1>

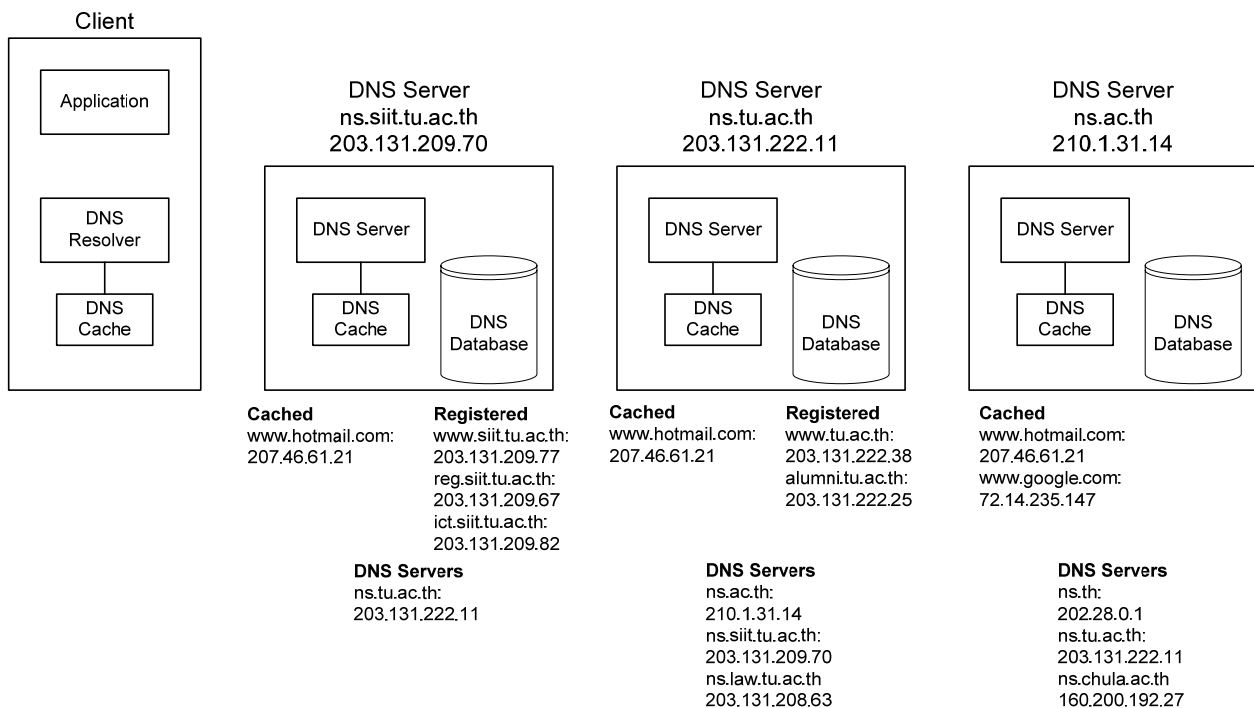
<<< ... the remainder of the HTML - not shown in this Quiz question ... >>>

</html>
```

- What is the size of the requested file? [0.5 mark]
- What was the URL that the user clicked on (or typed into their browser)? (Give the full URL) [0.5 mark]
- Was the requested file secured (that is, password protected)? Explain why or why not. [1 mark]

Question 4 [2 marks]

Consider the DNS configuration in the following figure. Assume the Client DNS Resolver is configured so that it knows the IP address of its local DNS server (ns.siiit.tu.ac.th, 203.131.209.70).



The time to send a DNS message between any two computers on the Internet is 10ms (e.g. from Client to ns.siiit.tu.ac.th is 10ms). Ignore any other delays (such as processing within each computer).

How long does the application wait for DNS protocol before it can send an IP datagram to the web server:

- www.google.com
- www.siiit.tu.ac.th