MARWADI EDUCATION FOUNDATION

Faculty of Engineering/Technology/PG Studies

Computer Engineering / Information Technology

B.E. SEM: 4   MID-SEM. EXAM: I   March : 2015

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Subject: - Computer Network (2140709)   **Date:- 16/03/2015**

Total Marks:-30   **Time: - 75 Minutes**

Instructions:
   1. Attempt all questions.
   2. Make suitable assumptions wherever necessary.
   3. Figures to the right indicate full marks.

Question: 1.   [6]

.   (a) Which layers in the Internet protocol stack does a router process? Which layers does a
   .   link-layer switch process? Which layers does a host process?

.   (b) Consider sending a packet from a source host to a destination host over a fixed route.
            List the delay components in the end-to-end delay.

       (c) What advantage does a circuit-switched network have over a packet-switched network?

Question: 2.   [12]

       (a) What are the five layers in the Internet protocol stack?
            What are the principal responsibilities of each of these layers?

       (b)

       1. Suppose you would like to urgently deliver 40 terabytes data from Rajkot to Mumbai.
          you have available a 100 Mbps dedicated link for data transfer. Would you prefer to
          transmit the data via this link or instead use Maruti Courier over- night delivery? Explain.

       2. Describe how Web caching can reduce the delay in receiving a requested object. Will Web
          caching reduce the delay for all objects requested by a user or for only some of the objects? Why?

                                           OR

       (b)

       1. Consider an HTTP client that wants to retrieve a Web document at a given URL. The IP address
          of the HTTP server is initially unknown. What transport and application-layer protocols besides
          HTTP are needed in this scenario?

       2. Write a short note on FTP.

Question: 3.   [12]

       (a) Explain DNS, Resource Records

       (b) Write a short note on HTTP. Also Explain persistent and non – persistent HTTP with Example

                                           OR

(a) How long does it take a packet of length 1,000 bytes to propagate over a link of distance 2,500 km, propagation speed 2.5×10^8 m/s, and transmission rate 2 Mbps? More generally, how long does it take a packet of length L to propagate over a link of distance d, propagation speed s, and transmission rate R bps? Does this delay depend on packet length? Does this delay depend on transmission rate?

(b) True or False

1. A user requests a Web page that consists of some text and three images. For this page, the client will send one request message and receive four response messages.

2. Two distinct Webpages (for example,www.mit.edu/research.html and www.mit.edu/students.html) can be sent over the same persistent connection.

3. With non-persistent connections between browser and origin server, it is possible for a single TCP segment to carry two distinct HTTP request messages.

4. The Date : header in the HTTP response message indicates when the object in the response was last modified.

5. HTTP response messages never have an empty message body.

---Best of Luck---

Course Outcome Wise Questions

Subject Code	**2140709**	Subject	**COMPUTRER NETWORKS**

CO No.	Course Outcome
CO1	Describe the importance of computer networks and various performance metrics.
CO2	Distinguish and relate various protocols in layered architecture of computer networks.
CO3	Explain various topological and routing strategies for IP based networks.
CO4	Prepare program with Socket to demonstrate data communication.
CO5	Simulate static and dynamic routing protocols through simulation tools.
CO6	Compare various devices and protocols that builds computer network.

Blooms Taxonomy	Question List
Remember / Knowledge	
Understand	
Apply	
Analyze	
Evaluate	
Higher order Thinking / Creative	