

Reg.No																			
--------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



Manipal Institute of Technology
(Constituent Institute of MAHE – Deemed University)
Manipal – 576 104



FIFTH SEMESTER B.E (IT) END SEMESTER MAKEUP EXAMINATIONS – JANUARY, 2007
SUBJECT: COMPUTER NETWORKS – (ICT-305)
(REVISED CREDIT SYSTEM)

TIME: 3 HOURS

MAX.MARKS: 50

Instructions to Candidates:

- Answer any 5 FULL questions.
- All questions carry equal marks.
- Missing data may be suitably assumed

- 1A. What is CSMA scheme? Discuss non-persistent, 1-persistent and p-persistent CSMA.
- 1B. Explain 802.5 token ring standard.
- 1C. The value of the total length field in an IP datagram is 36 and the value of the HLEN field is 5. How many bytes of data is the packet carrying ?
(5+3+2)
- 2A. What is meant by traffic shaping? Discuss the leaky bucket algorithm with diagrams.
- 2B. The following is a dump of a TCP header in hexadecimal format:
05320017 00000001 00000000 500207FF 00000000.
i) What is the destination port number?
ii) What is the value of HLEN field?
iii) What is the window size?
- 2C. What are the reasons for using the layered protocols?
(5+3+2)
- 3A. Discuss the following adaptive routing techniques with an example to each:
i) Distance vector routing
ii) Link state routing.
- 3B. Suppose that a router receives an IP packet containing 600 bytes of data and has to forward the packet to a network with maximum transfer unit of 200 bytes. Assume that IP header is 20 bytes long. Show the fragments that the router

- creates and specify the relevant values in each fragment header. (i.e total length, fragment offset and more bit).
- 3C. Differentiate between ARP and RARP. (5+3+2)
- 4A. Explain the format of OPTIONS field in IPv4 header. Discuss the following OPTIONS.
- i) Record route
 - ii) Strict source route
 - iii) Loose source route
 - iv) Timestamp
- 4B. Explain TCP 3-way handshake for connection establishment with the aid of a suitable example.
- 4C. A Class-B network has a subnet mask of 255.255.224.0. What is the maximum number of hosts/subnet? (5+3+2)
- 5A. Discuss the various ICMP error reporting messages.
- 5B. Explain the various steps involved in CHECKSUM calculation in sending and receiving UDP.
- 5C. What is CIDR? Explain with suitable example. (5+3+2)
- 6A. Differentiate between:
- i) LAN and MAN
 - ii) Pure ALOHA and slotted ALOHA.
- 6B. Discuss the operation of transparent bridges.
- 6C. What is multicasting? Discuss a protocol to control congestion for multicasting. (5+3+2)
