Computer Networks

DECEMBER 18

Computer Engineering (Semester 5)

Total marks: 80
Total time: 3 Hours

INSTRUCTIONS
(1) Question 1 is compulsory.
*(2) Attempt any **three** from the remaining questions.*
(3) Draw neat diagrams wherever necessary.

Attempt Any 5

1.a. What are the design issues for OSI layers?   (4 marks)

1.b. Differentiate between connection oriented and connection-less Service?   (4 marks)

1.c. List the advantages of fiber optics as a communication medium.   (4 marks)

1.d. Explain with examples the classification of IPv4 addresses.   (4 marks)

1.e. Explain in short different framing methods.   (4 marks)

1.f. Explain the need of subnet mask in subnetting   (4 marks)

2.a. What is topology? Explain the types of topologies with diagram,

advantages and disadvantages.   (10 marks)

2.b. What is IPv4 protocol? Explain the IPv4 header format with diagram.   (10 marks)

3.a. Explain CSMA Protocols. Explain how collision and handled in *CSMAICD*.   (10 marks)

3.b. What is Traffic shaping? Explain leaky bucket algorithm and compare it with token backed
algorithm.   (10 marks)

4.a. What is ICMP Protocol? Explain the ICMP header format with diagram.   (10 marks)

4.b. Write a program for client server applications using Socket Programming (UDP)   (10 marks)

5.a. Explain the use of TCP timers in details.   (10 marks)

5.b. Compare Open Loop congestion control and Closed Loop congestion control.   (10 marks)

Write a short note on the following (Any Two)

6.a. Internetworking Devices   (10 marks)

6.b. Distance Vector Routing   (10 marks)

6.c. ARP/RARP   (10 marks)

6.d. SMTP   (10 marks)