



Computer Networks

JUNE 19

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.

1.a. Explain design issues of layers. Explain ISO OSI reference model with diagram. (10 marks)

1.b. Explain design issues of Data Link layer. Explain Sliding Window Protocol

Selective Repeat. (10 marks)

2.a. Explain with diagram the relationship between Protocol, Interface and Service. (5 marks)

2.b. Explain Repeater, Hub, Bridge, Switch Gateway. (5 marks)

2.c. Describe TCP header with diagram. (10 marks)

3.a. Explain different framing methods? What is the advantage of variable length frame over fixed layer frame? (10 marks)

3.b. Describe IPV4 header format with diagram. (10 marks)

4.a. Classify transmission media and compare them. (10 marks)

4.b. Explain Distance vector routing protocol. What is count to infinity problem?

How to overcome it? (10 marks)



5.a. Explain Channel allocation problem. Explain CSMA/CD protocol. A network with CSMA/CD has 10 Mbps bandwidth and 25.6ms maximum propagation delay. What is the minimum frame size?

(10 marks)

5.b. Explain Congestion control. Explain leaky bucket algorithm.

(10 marks)

Short note on any four.

6.a. HDLC

(5 marks)

6.b. Network Address Translation (NAT)

(5 marks)

6.c. Berkeley Sockets

(5 marks)

6.d. ARP

(5 marks)

6.e. ICMP

(5 marks)

6.f. DNS

(5 marks)

6.g. SMTP

(5 marks)