

2008

COMPUTER NETWORK

PAPER—CS/MCA/2404

Full Marks : 100

Time : 3 hours

Answer any **five** questions

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

1. (a) Write down the design issues of various layer of OSI reference model.

(b) Describe the difference between connection oriented and connection less service.

(c) Illustrate TCP/IP reference model with proper figure.

5 + 3 + 6

(Turn Over)

2. (a) What do you mean by topology ? Describe each topology briefly.
- (b) Explain TDM and FDM techniques. (1 + 7) + 6
3. (a) Compare the datagram and virtual circuit subnet.
- (b) What do you mean by static and dynamic routing algorithm ?
- (c) Describe Bellman-Ford routing algorithm. 4 + 3 + 7
4. (a) What is congestion ? List out the factors which are responsible for congestion.
- (b) Describe the general principles of any congestion control technique.
- (c) Illustrate token bucket algorithm. (2 + 2) + 4 + 6
5. (a) What are the key assumptions for dynamic channel allocation in LANs and MANs ?
- (b) What is ALOHA ?
- (c) Describe ARP. 6 + 3 + 5

6. (a) What is Manchester Coding? Why it is used? Compare the bandwidth it uses to that of NRZ.
- (b) What is meant by simplex half-duplex and full-duplex communication systems. Give representative examples of each.
- (c) What is intersymbol interference? What are its causes?
- (d) What is the function of a modem?
 $(1 + 2 + 2) + (1 + 1 + 3) + (1 + 1) + 2$
7. (a) What is channel? What is channel capacity? How is it related to bandwidth?
- (b) Compare the Go Back N and Selective Repeat Sliding Window Protocol.
- (c) Draw an ATM network and explain through one example to understand as to how the ATM network works.
 $(1 + 1 + 2) + 5 + 5$
8. Write down the short notes (any two): $7 + 7$
- (i) Optical Network
- (ii) Classful Addressing

(iii) DNS

(iv) E-mail architecture

(v) FDDI.

[*Internal Assessment : 30*]
