6. (a) Explain the working of IEEE 802.5 bases LAN. 5

(b) What is CSMA /CD ? Explain how collisions are detected ? 5

7. (a) What is the need of routing ? Explain shortest path routing algorithm. 5

(b) Explain the working of token bucket algorithm. 5

8. Write short notes on any *two* : 2×5=10

(a) URL and Internet

(b) Working of Internet

(c) SMTP nad MIME

(d) Transport services.



Total No. of printed pages = 4

**44 (5) DCCN 5.3**

**2012**

# DATA COMMUNICATION AND NETWORKING

Paper : 5.3

Full Marks - 80

Time - Three hours

The figures in the margin indicate full marks for the questions.

1. Answer very briefly : 1×10=10

(a) At which OSI layer does data translation and code formatting occur ?

(b) What is the purpose of Inverse ARP ?

(c) Write any IP address which is an IP address of class - C.

(d) Why does ARP use ?

(e) On the basis of what switch forwards a packet ?

(f) Give the name of an wireless data communication type which has a high data rate but is limited to very short distance.

(g) What method allow large number of independent selectable channels to exist in a single fiber ?

(h) What is MAC ?

(i) What are the full forms of SMTP and MIME ?

(j) In which OSI layer, Frame-Relay is mapped to ?

2. Answer briefly : 2×5=10

(a) Define the term 'Minimum Data Rate' for a noisy channel.

(b) What is 'stop-and-wait' protocol ?

(c) Define the term p-persistent CSMA ?



(d) What do you mean by fragmentation ?

(e) Data link protocol always puts the CRC in a trailer rather than a header. Why ?

3. (a) Explain the use of Computer Networks. 2

(b) Explain the functions of physical and transport layer in OSI reference model. 4

(c) Explain the microwave and lightwave wireless transmission technique. 4

4. (a) Discuss the issues that need to be considered while designing a data link layer. 5

(b) Explain the working of 'selective repeat' sliding window mechanism with a suitable example. 5

5. (a) Explain how Hamming code is useful in detecting and correcting 1-bit error with suitable example. 5

(b) Explain the function of I-frame, S-frame and U-frame in HDLC protocol. 5