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Total No. of Pages : 02

Total No. of Questions : 09

PGDCA (Sem.-2<sup>nd</sup>) (2012 Batch)**DATA COMMUNICATION AND NETWORKS**

Subject Code : PDCA-204

Paper ID : [B0153]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

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**SECTION-A****I. Answer briefly :**

- a. How does AM differ from ASK?
- b. Differentiate between polling and selecting.
- c. For n devices in a network, what is the number of cable links required in Mesh and Bus topology?
- d. Which class of IP addresses is used for multicasting?
- e. What do you mean by packet switched network?
- f. A 10 kHz baseband channel is used by digital transmission system. Ideal pulses are sent at the Nyquist rate, and the pulses can take 8 levels. What is the channel capacity of the system?
- g. What is the difference between connection oriented and connectionless services (give at least one example for each)?

- h. What is the difference between spread spectrum and multiplexing?
- i. Why IP version 6 is required?
- j. A telephone line has a bandwidth of 3000Hz. Compute its data transfer capacity if the signal to noise ratio is 30dB.

### SECTION-B

- 2. What do you mean by Switching? Describe in brief the various switching methods.
- 3. Discuss the address format of IPv4 protocol.
- 4. Explain the functioning of sliding window to go back-n protocol by taking some suitable example.
- 5. What is HDLC (High Level Data Link Control) protocol? What are the different types of frames? Discuss briefly.
- 6. Name various Error Detection and Correction techniques. Also find the CRC using a polynomial,  $P = 110011$ , for a given data,  $M = 11100011$ .

### SECTION-C

- 7. How CSMA/CD method handles the collisions and what should be the minimum size of the message? Discuss in detail.
- 8. Explain in detail the design issues of Network layer.
- 9. Write short notes on **any two** :
  - i) SDM, FDM, TDM
  - ii) Channel allocation
  - iii) Flow control and buffering