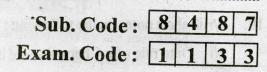
(i) Printed Pages: 3

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(ii) Questions :9



Post Graduate Diploma in Computer & Applications 2<sup>nd</sup> Semester 1046

# DATA COMMUNICATION & NETWORKS Paper-PGD 2003

# Time Allowed : Three Hours]

[Maximum Marks: 80

Note :- Attempt one question each from Sections A, B, C and D. Question IX is compulsory.

### SECTION-A

- I. (a) What do you mean by network topology? What are different types of LAN topologies? Explain with the help of diagrams.
  - (b) Differentiate between OSI and TCP/IP models. 8,8
- II. (a) What are network protocols ? Explain protocol hierarchy along with layers and interfaces. Also draw the diagram.
  - (b) Explain design issues that occur in computer networks.

1

8,8

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[Turn over

#### SECTION-B

- III. Write short notes on the following :
  - (a) Data rate of a Channel
  - (b) Analog vs. Digital Communication
  - (c) Packet Switching
  - (d) Modems.

4×4=16

- IV. (a) What do you mean by transmission media ? Differentiate between guided and unguided transmission media. Also explain transmission of data through any two media of your choice.
  - (b) What are modulation techniques? Explain different techniques and their functioning. 8,8

#### SECTION-C

- V. (a) Explain various error correcting codes available to deal with errors in data link layer. How are error correcting codes different from error detecting codes ?
  - (b) Explain functioning of simplex protocol. 10.6
- VI. (a) Which design issues are handled in data link layer? Explain using diagrams, wherever required.
  - (b) What are Sliding Window Protocols? Explain their functioning. 8.8

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### SECTION-D

VII. What are Routing Algorithms ? Why are they used ? Explain flooding, how based and hierarchical routing algorithms in detail. 16

VIII. Explain Congesting Control Algorithms. Why are they used ? Also explain general principles of congestion control. 16

## (Compulsory question)

- IX. (a) Explain difference between LAN and WAN.
  - (b) What are hubs ? What is their function ?
  - (c) What is Fourier analysis?
  - (d) Define multiplexing techniques.
  - (e) What is HDLC?
  - (f) Explain nature of errors occurring in data link layer.

3

- (g) What is internet working?
- (h) Briefly explain fragmentation process in internetworking.

8×2=16

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