

(i) Printed Pages : 3

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(ii) Questions : 9

Sub. Code :

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Exam. Code :

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**Post Graduate Diploma in Computer
& Applications 2nd 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. 8,8

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.
- 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

SECTION-D

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

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

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

8×2=16