

2031
P.G. Diploma in Computer Applications
First Semester
PGD-1104: Data Communication and Networks

Time allowed: 3 Hours

Max. Marks: 60

NOTE: Attempt five questions in all, including Question No. IX (Unit-V) which is compulsory and selecting one question each from Unit I - IV.

x-x-x

UNIT – I

- I. Describe various types of network topologies highlighting advantages and limitations of each type. (12)
- II. Distinguish between the following
 - a) OSI and TCP/IP
 - b) Router, Repeater and Switch (2x6)

UNIT – II

- III. What do you understand by multiplexing? Give a detailed comparison of FDM, WDM and TDM techniques. (12)
- IV. What is a transmission media? Explain features and working of guided and unguided transmission media taking at least three examples of each type. (12)

UNIT – III

- V. Highlight major design issues of data link layer. Explain the concept of parity check and hamming code with suitable example. (12)
- VI. Compare the working of stop and wait ARQ, Go-back-N ARQ and selective repeat ARQ data link protocols. (12)

UNIT – IV

- VII. Compare the working of shortest path, hierarchical and flow based routing algorithms. (12)
- VIII. Explain the principles of congestion control. Discuss working of leaky bucket and token bucket algorithms. (12)

P.T.O.

(2)

UNIT – V

IX. Attempt the following:-

- a) Distinguish between connection oriented and connectionless service.
- b) What is bandwidth limitation?
- c) List various modulation techniques.
- d) What is the usage of CRC?
- e) What is HDLC?
- f) Define fragmentation.

(6x2)

x-x-x