2023

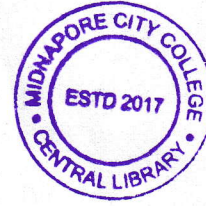## BCA 4th Semester Examination

Computer Network

PAPER — 2205

Full Marks : 100

Time : 3 hours

The figures in the right-hand margin indicate marks.

*Candidates are required to give their answers
in their own words as far as practicable.*

Illustrate the answers wherever necessary.

1. Answer *any* **five** questions :   5×2=10

    (a) What is data communication? What are
         the necessary components of data
         communication?

    (b) List the layers of OSI model.

    (c) Differentiate between digital signal and
         analog signal.

(2)

(d) What are period and frequency?

(e) What are bit rate and baud rate?

(f) Distinguish between synchronous and asynchronous transmission.

(g) What is wavelength? How do we represent wavelength?

(h) What is bit stuffing? Give an example.

Answer *any* **four** from the following questions :

4×15=60

2. What is topology? Describe different types of topology. What is block coding? What are the steps of block coding?

2+8+2+3=15

3. What are the categories of network? Explain data rate limits for noiseless channel and noisy channel. What is the relationship between propagation speed and propagation time?

6+4+5=15

4. What is bandwidth? Explain different line coding techniques of digital transmission. A signal travels from point A to point B. At point A, the signal power is 100 W. At point B, the power is 90 W. What is the attenuation in decibel?

2+10+3=15

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(Continued)

(3)

5. Describe ASK and FSK sampling technique with proper diagram. Explain FDM and TDM with proper diagram.

8+7=15

6. What are the differences between twisted pair cable, coaxial cable and fiber-optic cable? A receiver receives the code 1110101101. Using the hamming coding algorithm, what is the original code?

6+9=15

7. Explain the Go-Back-N ARQ technique in flow control. What is HDLC? Describe the frame format of HDLC.

7+2+6=15

8. Describe the procedure of CSMA/CA with proper flowchart. What is logical address? Explain classful addressing.

6+2+7=15

9. Write short notes on *any* **three** from the following :

3×5=15

(a) SMTP

(b) FTP

(c) DNS

(d) WWW

[**Internal Assessment : 30 Marks**]

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