Seat No. : _____

AI-103

April-2025

Int. M.Sc., (CA & IT) Sem.-VI

DATA COMMUNICATION & NETWORKING

Time : 2:30 Hours] **[Max. Marks : 70**

1. (A) Write the answer of following questions (any **Five**) : **10**
   - (1) If K = 4 then how many code word required and how many code words wasted ?
   - (2) Write Default Subnet Mask of Class A, B and C.
   - (3) Explain Connection Type.
   - (4) Explain Unicasting, Multi Casting and Board Casting.
   - (5) What is error type in data transmission ?
   - (6) What is the Advantage of Multiplexing ?
   - (7) What is Frequency & Period in Analog signal ?

   (B) Write Network id and Host id of following classful IP addresses : **4**
   - (1) 200.25.10.11
   - (2) 135.25.10.30
   - (3) 120.30.25.10
   - (4) 100.20.10.30

2. (A) Answer the following questions (any **Four**) : **12**
   - (1) Do Byte Stuffing for data "DCN @@2025##All The Best@###" Where # is Flag and @ is Escape.
   - (2) Do Bit Stuffing for Data "11111 0000 111111 000 111110 0111110" Where 01111110 is Flag.
   - (3) Do Two dimension Parity check for K = 2 data word.
   - (4) Explain Data Flow Mode
   - (5) Explain Persist method.
   - (6) Explain Transmission Impairment in detail.

   (B) Explain Fiber Optics guided media **2**

3. Answer the following questions (any **Two**) : **14**

(1) Calculate CRC for data word 1111 where divisor is 1011. Also verified at receiver side.

(2) Calculate four bit checksum for data 9,8,10,2,4,3. Also verify checksum at receiver side.

(3) Explain Frequency Division Multiplexing with example.

4. Answer the following questions (any **Two**) : **14**

(1) What is Sliding Window Protocol ? Explain Go Back-N sliding window protocol with example.

(2) What is Advantage of Spread Spectrum ? Explain Frequency Hope Spread Spectrum in detail

(3) Explain PURE ALOHA protocol in detail

5. Answer the following questions (any **Two**) : **14**

(1) Explain CSMA/CD protocol

(2) Explain Reservation Protocol

(3) What is Switching Network ? Explain Circuit Switching Network.