

Seat No. : _____

AA-130

April-2018

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

Data Communication and Networking

Time : 3 Hours]

[Max. Marks : 100

1. (A) Answer the following questions : (any **six**) **18**

- (1) What is point to point and multipoint connection ?
- (2) What is Dataflow mode ?
- (3) What is Piggybacking ?
- (4) Do Byte stuffing for data "DATA@@ ##COMMUNICATION @@##NETWORKING@#" where@ is flag and # is esc.
- (5) Do Bit stuffing for data "0111 1111 0111 1100 0111 1110" where 0111 1110 is flag.
- (6) Calculate code word for data word where $k=3$ using even parity bit method.
- (7) 205.16.37.36/28 is classless IP address. Find the first address, last address & total number of address.

(B) Explain Automatic Repeat Request. **2**

2. (A) Answer the following questions : (any **three**) **18**

- (1) Find the CRC for data word 1000 where divisor is 1011.
- (2) Find the 4 bit check sum for data 10,7,6,4,8.
- (3) What is Sliding window protocol ? Explain Selective Repeat sliding window protocol.
- (4) What is Routing ? Explain Link state routing algorithm in detail.

(B) Explain Bursty Data Rate. **2**

3. (A) Answer the following questions : (any **three**) **18**
- (1) What is Congestion ? Explain close loop in detail.
 - (2) Explain Distance vector routing algorithm with example.
 - (3) Explain Go Back N sliding window protocol with example.
 - (4) Explain Open loop technique for congestion control.
- (B) Explain Negative acknowledgement. **2**
4. (A) Answer the following questions : **10**
- (1) 199.10.34.210 is classful IP address. Find the network id and host id.
 - (2) Why sender window size is $2^n - 1$ In Go back N Protocol ?
 - (3) Write difference between connection oriented service verses connection less service.
 - (4) Explain Stop & Wait Protocol.
 - (5) What is Port address ? Write different category of Port address.
- (B) Answer the following questions : **10**
- (1) What is wavelength and latency ?
 - (2) What is bandwidth ?
 - (3) There are two antennas; it takes 5 ms to signal to reach from antenna A to antenna B. Find frequency and wavelength. ($c=3 \times 10^8$)
 - (4) What is virtual circuit identifier ?
 - (5) What are categories of coaxial cables and its use ?
5. (A) Answer the following question : **18**
- (1) What are the transmission media ? Explain about twisted pair cable.
 - (2) What is switching network ? Explain packet switching.
 - (3) What is multiplexing ? Explain frequency Division multiplexing.
- (B) Explain Time and Frequency Domain. **2**
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