

Total Pages : 3

B.Sc/3rd Sem (H)/COMP/22(CBCS)

2022

## COMPUTER SCIENCE (Honours)

Paper : C 7-T

(Computer Networks)

[CBCS]

Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

### Group - A

Answer any *five* questions :

2×5=10

1. What do you mean by pig-backing?
2. What is ARPANET?
3. Define framing.
4. Define multiplexing techniques.
5. What is data rate and signal rate?
6. What do you mean by half-duplex?
7. Define Routing.
8. State in which layer they work : Repeaters Hubs, Bridges, Routers, switches and gateways.

P.T.O.

( 2 )

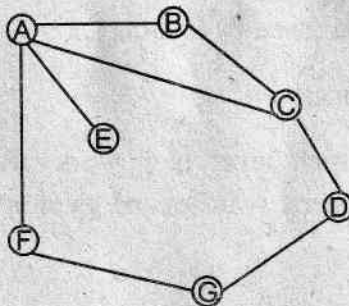
**Group - B**

Answer any *four* questions : 5×4=20

9. What are the different types of error detection methods?  
Explain the CRC error detection technique using generator polynomial

$$x^4 + x^3 + 1 \text{ and data } 11100011.$$

10. Describe the stop and wait flow control technique.
11. Two neighbouring nodes A and B uses sliding window protocol with 3 bit sequence number. As the ARQ mechanism Go Back N is used with window size of 4. Assume A is transmitting and B is receiving. Show window position for the following events :
- (i) Before A send any frame.
  - (ii) After A send frame 0, 1, 2 and receive ACK (Acknowledgement) for B for 0 and 1.
12. Draw NRZ-L encoding for bit pattern 00110110.
13. Complete the final routing table at node A using RIP (Routing Information Protocol) protocol for the following network. Assume the cost of hop count.



( 3 )

Distance	Cost	Next hop

14. Explain Delta Modulation (DM) technique with neat diagram.

**Group - C**

Answer any *one* question :  $10 \times 1 = 10$

15. What is IPV<sub>4</sub> protocol? Explain the IPV<sub>4</sub> Header format with diagram.

16. Write short notes (any *two*) :  $5 \times 2 = 10$

(a) SONET

(b) ALOHA

(c) UDP

(d) RPC

---