

Total No. of Questions : 6]

SEAT No. :

**P71**

[Total No. of Pages : 2

**Oct./TE/Insem. - 190**  
**T.E. (Computer)**  
**COMPUTER NETWORKS**  
**(2015 Course) (Semester - I)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) *Neat Diagrams must be drawn wherever necessary.*
- 2) *Figures to the right side indicate full marks.*
- 3) *Use of Calculator is allowed.*
- 4) *Assume suitable data, if necessary.*

**Q1)** a) Draw TCP/IP reference model and Write function of each layer. [6]

b) For the bit sequence 10000101111 draw the waveform for [4]

- i) Manchester Encoding
- ii) Differential Manchester Encoding

OR

**Q2)** a) Explain in brief: FHSS and DSSS. [4]

b) What are different types of topology? Explain any one. [6]

**Q3)** a) Explain in detail ,working of PPP with state transition diagram? [6]

b) Given the dataword 1001000 and divisor 1011 [4]

- i) Show the generation of the codeword at the sender's site (using binary division)
- ii) Show the checking of the codeword at the receiver site (Assume no error)

OR

**P.T.O.**

**Q4)** a) Compare and contrast the Go-Back-N ARQ protocol with Selective-Repeat ARQ. [6]

b) In a Stop-and-Wait system, the bandwidth of the line is 1 Mbps, and 1 bit takes 20 milliseconds to make a round trip. What is the bandwidth-delay product? If the system data packets are 1,000 bits in length, what is the utilization percentage of the link? [4]

**Q5)** a) Draw 802.11 frame format and explain addressing mechanism in detail. [6]

b) Measurement of a slotted ALOHA channel with an infinite number of users, show that 10 percent of the slots are idle: [4]

i) What is the channel load?

ii) What is the throughput?

iii) Is the channel underload or overloaded?

OR

**Q6)** a) Explain MAC sublayer (DCF) in wireless LAN. [4]

b) Explain CSMA/CD flowchart [4]

c) What are common implementations of Fast Ethernet (100 Mbps) [2]

