

Total No. of Questions : 10]

SEAT No. :

P3983

[Total No. of Pages : 3

[5353]-585

T.E. (Computer) (End Semester)
COMPUTER NETWORKS
(2015 Pattern)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

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

- Q1)** a) Define TCP/IP reference model. [4]
- b) A line has a signal-to-noise ratio of 1000 and a bandwidth of 4000khz. What is the maximum data rate supported by this line. [3]
- c) Write a short note on CSMA/CD. [3]

OR

- Q2)** a) Explain in brief: FHSS and DHSS. [6]
- b) Explain PPP frame format. [4]

- Q3)** a) Explain control field of HDLC w.r.t I-frame, S-frame and U-frame. [6]
- b) Calculate the throughput for stop-and wait protocol, if the frame size is 4800 bits, bit rate is 9600 bps, within distance 2000 km with speed of propagation 200000 km/s. [4]

OR

- Q4)** a) Explain GO Back N ARQ in detail. [5]
- b) Explain Bluetooth 802.15 frame format in detail. [5]

P.T.O.

- Q5)** a) A small organization is given a block with the beginning address and the prefix length 205.16.37.24/29 (in slash notation). What is the range of the block. [4]
- b) What are general techniques to improve quality of service ? Explain any one in detail. [8]
- c) Draw and Explain IPV4 header. [4]

OR

- Q6)** a) Write a short note on [12]
- i) Address Resolution Protocol (ARP)
- ii) Network Address Translation (NAT)
- iii) Internet Control Message Protocol (ICMP)
- b) Explain Link State Routing Algorithm with example? [4]

- Q7)** a) What causes Silly Window syndrome? How it is avoided? [6]
- b) In a Stop-and-Wait system, the bandwidth of the line is 2 Mbps, and 1 bit takes 20 milliseconds to make a round trip. What is the bandwidth-delay product? If the system data packets are 2,000 bits in length, what is the utilization percentage of the link? [6]
- c) Explain TCP header in detail. [6]

OR

- Q8)** a) What are the types of socket? Explain various socket primitives used in connection oriented client server approach. [10]
- b) Explain UDP Header ?Below is an Hexadecimal dump of an UDP datagram captured. [8]

06 32 00 0D 00 1C E2 17

- i) What is source port number?
- ii) What is destination port number?
- iii) What is the length of the data?
- iv) Is packet directed from a client to server or vice versa?

- Q9)** a) Explain HTTP request and reply message format with example. [6]
- b) Write short notes on [6]
- i) DHCP
- ii) SMTP
- c) Explain DNS message format? [4]

OR

- Q10)** a) Explain FTP in detail? Explain any four FTP commands. [8]
- b) Browsers have a in-built caching mechanism for a better user experience. How do websites indicate if a web resource needs to be cached or not? Show HTTP messages in transit for both scenarios. [8]

