2599

Computer Network
(New) (1030)

P. Pages : 2

Time : Three Hours
Max. Marks : 100

Instructions to Candidates :
1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Attempt **any two** question from each unit.
5. Use of non-programmable calculator is allowed.
6. Draw neat diagrams wherever necessary.
7. Answers to the questions must be precise and to the point.

UNIT - I

1. a) Using 5 bit sequence number, what is the maximum size of the send and receive window for each of the following protocols ? 5
   i) GO-Back N ARQ.
   ii) Selective Repeat ARQ.

   b) Explain with suitable example bridges from 802.x to 802.y. 5

2. a) A network using CSMA/CD has a bandwidth of 10 Mbps if the maximum propagation time is $25.6\mu s$, what is the minimum size of the frame. 5

   b) Which one has more overhead, a repeater or a bridge ? Explain your answer and also list the types of bridge. 5

3. What is framing ? Explain framing techniques with suitable examples. 10

UNIT - II

4. a) Which fields of the IPv4 Header Changes from router to router ? Explain. 5

   b) Draw and explain format of an IPv6 datagram. 5

5. Explain Network Address Translation with neat diagram. 10

6. An organization is granted the block 16.0.0.0/8. The administrator wants to create 500 fixed length subnets. 10
   i) Find the subnet mask.
   ii) Find the number of addresses in each subnet.
   iii) Find the first and last address in subnet 1.
   iv) Find the first and last address in subnet 500.

UNIT - III

7. a) What is the use of proxy ARP ? Explain with neat diagram.   5

    b) What is IGMP ? List the ICMP messages and explain IGMP message format.   5

8. a) What is the size of address space lost when we transform a multicast IPv4
        address to an ethernet multicast address ?   5

    b) Explain direct and indirect delivery with neat diagram and list the forwarding
        techniques.   5

9.   How ICMP is used to trace a route ? Explain with example.   10

UNIT - IV

10. a) Explain two node instability problem in distance vector routing.   5

    b) What is BGP session ? Explain external and internal BGP.   5

11. a) Differentiate between distance vector routing and link state routing.   5

    b) explain the application of multicasting.   5

12.   Explain the format of UDP datagram and UDP pseudoheader for checksum
        calculation.   10

UNIT - V

13. a) What can you say about the TCP segment in which the value of the control
        field is one of the following ?   5
        i)   000001
        ii)   000000
        iii) 010001
        iv)   000100
        v)   000010

    b) What is traffic shapping ? Explain token bucket technique.   5

14. a) Do port addresses need to be unique ? Why or why not ? Why are port
        addresses shorter than IP address ?   5

    b) What is RSVP ? Explain RSVP reservation styles.   5

15.   Explain closed loop congestion control mechanism in detail.   10

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