10CS/IS64

Sixth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Computer Network - II

Time: 3 hrs.

Max. Marks:100

Note: *Answer any FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1 a. List atleast five differences between datagram and virtual circuit switching. **(05 Marks)**
   b. Explain a switch with multistage architecture to transport bits from input to output port.
   (05 Marks)
   c. Explain Bellman ford algorithm used for routing considering the network topology given in Fig Q1(c)
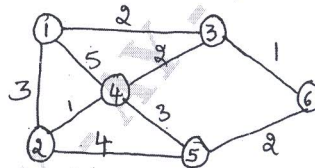

Fig Q1(c) **(10 Marks)**

2 a. Explain weighted fair Queuing used for providing QOS in Internet. **(05 Marks)**
   b. Describe buffer management technique based on random early detection. **(05 Marks)**
   c. What is traffic policing? Explain leaky bucket algorithm used for traffic policing. **(10 Marks)**

3 a. List atleast ten fields of IP V4 header, and explain fields that are updated at every hop.
   (08 Marks)
   b. Explain address resolution protocol and reverse address resolution protocol functions.
   (04 Marks)
   c. Explain tunneling based solution for migration from IPV4 to IPV6. **(04 Marks)**
   d. List and explain fields of UDP datagram and mention two application protocols that use UDP as a transport protocol. **(04 Marks)**

4 a. Describe connection establishment in TCP using three way handshakes. **(05 Marks)**
   b. Describe TCP congestion control used for controlling congestion window. **(05 Marks)**
   c. Explain mobile IP based routing and its optimization for routing in mobile networks.
   (10 Marks)

PART – B

5 a. Describe hierarchy of domain name space in DNS. **(05 Marks)**
   b. Describe network management tasks required to manage and control a communication network. **(05 Marks)**
   c. Classify Internet Infrastructure attacks into four categories and explain them briefly.
   (10 Marks)

6   a. Give an overview of QOS methods in integrated services.   (05 Marks)
    b. Give an overview of diffserv operation to offer QOS in Internet.   (05 Marks)
    c. Explain extranet VPN, internet VPN, and remote access VPN using a suitable diagram.
                                                                                   (06 Marks)
    d. Describe label switching paradigm in MPLS networks with an example considering ingress
        LSR, Core LSR, and Egress LSR.   (04 Marks)

7   a. A JPEG based computer screen consist of 1024 × 1280 pixels. Each pixel is represented by
        24 bits. Find out bandwidth required for the image, if a video consists of 30 images/second.
                                                                                   (04 Marks)
    b. Design a Huffman encoder for a source generating $\{a_1, a_2, a_3, a_4, a_5\}$ and with probabilities
        $\{0.05, 0.05, 0.08, 0.30, 0.52\}$.   (08 Marks)
    c. List contents of RTP packet header and explain them in brief.   (08 Marks)

8   a. Explain dynamic source routing protocol used for routing in mobile adhoc networks.
                                                                                   (08 Marks)
    b. Describe structure of sensor node used in wireless sensor network.   (06 Marks)
    c. Classify clustering protocols in wireless sensor network and explain LEACH routing
        protocol.   (06 Marks)

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