USN ☐☐☐☐☐☐☐☐☐☐   **10CS64**

Sixth Semester B.E. Degree Examination, June/July 2017
Computer Networks – II

Time: 3 hrs.   Max. Marks:100

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

PART – A

1   a.   Why is packet switching more suitable than message switching for interactive applications? Compare the delays in datagram packet switching and message switching. **(06 Marks)**
    b.   Define routing and forwarding. What are the goals of a routing algorithm? Discuss about flooding. **(06 Marks)**
    c.   Develop an algorithm to find shortest paths from a node to all nodes of a graph. Determine shortest path from node five (5) to other nodes in a given graph. Fig.Q1(c). **(08 Marks)**
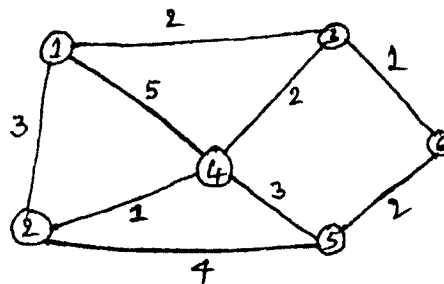

Fig.Q1(c)

2   a.   Explain fair queuing for the traffic management at the packet level. Deduce formula for calculating finish tags for fair and weighted fair queuing. **(06 Marks)**
    b.   Write note on : i) admission control   ii) traffic shaping. **(06 Marks)**
    c.   With a flowchart explain the function of leaky bucket algorithm. How dual leaky bucket principle works? **(08 Marks)**

3   a.   How subnet addressing helps IP addressing? For an IP address 211·212·202·101/28 find the subnet address and range of IP addresses. **(06 Marks)**
    b.   Explain how migration from IPV4 to IPV6 is done. **(06 Marks)**
    c.   With a neat diagram give the purpose of each component of IPV4 header. Which are the five classes of IP addresses? Where are those addresses used? **(08 Marks)**

4   a.   Give the general structure of TCP segment and write the purpose of each element in it. **(06 Marks)**
    b.   Explain the steps involved in mobile IP routing. **(06 Marks)**
    c.   Show how TCP connection is established using three way handshaking? Why unique initial sequence number is needed for each new connection? **(08 Marks)**

PART – B

5 a. Explain how recursive and iterative mapping of IP addresses are done in DNS servers.
        (06 Marks)
   b. Briefly explain the steps of DES algorithm.   **(06 Marks)**
   c. Which are the types of attacks that can occur on an internet infrastructure? Explain.
        (08 Marks)

6 a. Give the overview of the integrated services QoS.   **(06 Marks)**
   b. Explain MPLS. Which are the additional capabilities added to IP network by MPLS.
        (06 Marks)
   c. What is a VPN? How remote – access and site – to – site VPN works?   **(08 Marks)**

7 a. Explain Lempel – Ziv and run–length encoding. Give examples.   **(06 Marks)**
   b. Give the overview of SIP.   **(06 Marks)**
   c. Discuss about H·323 protocol. With a diagram explain H·323 connection.   **(08 Marks)**

8 a. Give the steps of DEEP clustering algorithm. How it differs from other clustering protocols?
        (06 Marks)
   b. Write a note on security of Ad-hoc networks.   **(06 Marks)**
   c. Explain intra-cluster and inter cluster routing protocols.   **(08 Marks)**

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