

USN

--	--	--	--	--	--	--	--	--	--

**Sixth Semester B.E. Degree Examination, June/July 2019**  
**Computer Networks – 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. How does packet switching perform better than message switching? Explain with an example. (08 Marks)
- b. What is count-to-infinity problem? How can it be overcome? (06 Marks)
- c. What is flooding? What are the steps taken to improve? (06 Marks)
- 2 a. Derive an equation for packet finishing time in Waited Fair Queuing. (06 Marks)
- b. Write the steps of Dijkstra's algorithm. Give an example. (08 Marks)
- c. Suppose that ATM cells arrive at a Leaky bucket policer at times  $t = 1, 2, 3, 5, 6, 8, 10, 11, 15$  and  $17$ . Assume  $I = 4$  and  $L = 5$ . Plot bucket content and identify non-conformity cells. (06 Marks)
- 3 a. Identify the classes of following IP-address:
  - (i) 111.168.70.5 (ii) 199.133.5.81
  - (iii) 139.0.0.99 (iv) 192.168.72.1
 (04 Marks)
- b. What is supernetting? Explain with an example. (06 Marks)
- c. Find the subnet address for the IP : 150.100.12.176 consider 7-bits for host address. (04 Marks)
- d. Compare and contrast IPv<sub>4</sub> with IPv<sub>6</sub>. (06 Marks)
- 4 a. What is a silly window syndrome? Propose its solution. (06 Marks)
- b. Explain the working of BGP. (06 Marks)
- c. What do you mean by multicasting? How does database update on pruning? (04 Marks)
- d. What is DHCP? Where is it applied? (04 Marks)

**PART – B**

- 5 a. How does an address mapping work in DNS? Discuss the two methods. (08 Marks)
- b. What is the protocol used to transmit a file? What are the steps in it?. (06 Marks)
- c. Write a note on: (i) SNMP (ii) Digital signature. (06 Marks)
- 6 a. What do you mean by QoS? Explain QoS architecture in integrated services. (08 Marks)
- b. What are the advantages of VPN? How is Tunneling work? (08 Marks)
- c. What is MPLS? Discuss its packet design. (04 Marks)
- 7 a. A source bandwidth 8 kHz is sampled at Nyquist rate. If the result is modeled using any value from  $[-2, -1, 0, 1, 2]$  and corresponding probabilities  $[0.05, 0.05, 0.08, 0.30, 0.52]$  then find its entropy. (06 Marks)
- b. What is the purpose of RTP? Discuss the design of its packet. (06 Marks)
- c. Explain the steps of Huffman encoding and perform Huffman encoding for a source generating  $\{a_1, a_2, a_3, a_4, a_5\}$  with probabilities  $\{0.52, 0.3, 0.08, 0.05, 0.05\}$  respectively. (08 Marks)
- 8 a. Discuss the classification of routing protocols in Adhoc-Network. (04 Marks)
- b. What are the security Vulnerabilities in Adhoc-Network? Explain different types of attack. (08 Marks)
- c. Write a note on: (i) Zigbee technology. (ii) Clustering protocols. (08 Marks)

\*\*\*\*\*

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and/or equations written eg,  $42+8 = 50$ , will be treated as malpractice.