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10CS/IS64

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 over come? (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 IPV₄ with IPV₆. (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)

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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.