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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Second Semester, M. Tech - Computer Science and Engineering (MCSE)

Semester End Examination; June - 2017

Advanced Computer Networks

Time: 3 hrs *Max. Marks: 100*

***Note**: Answer **FIVE** full questions, selecting **ONE** full question from each unit.*

UNIT - I

1 a. Calculate transfer time and throughput, when a user wants to transfer 1 MB file across 1GBPS network with 100 ms RTT. 5

b. Explain the following functions with prototype : 10

i) Socket ii) Bind iii) Listen iv) Accept v) Connect.

c. Explain how encapsulation is used in network architecture with example. 5

2 a. Explain HDLC bit oriented protocol. 8

b. Briefly explain Internet checksum algorithm. 6

c. Find the CRC for the data 10011010 and generator 1101. 6

UNIT - II

3 a. The table below is a routing table using CIDR. State to which next hop the following will be delivered,

i) C4. 4B. 31. 2E

ii) C4. 5E. 05. 09

iii) C4. 4D. 31. 2E

iv) C4. 5E. 03. 87

v) C4. 5E. 7F. 12

vi) C4. 5E. D1. 02

12

Net/mask	Next hop
C4.5E. 2.0/23	A
C4.5E.4.0/22	B
C4.5E. 10.0/19	C
C4. 5E. 40.0/18	D
C4.4C.0.0/14	E
C0.0.0.0/2	E
80.0.0.0/1	G

b. Explain OSPF protocol. 8

Contd…2

4 a. Explain source routing with example. 10

b. Explain Distance Vector algorithm with example. 10

UNIT - III

5 a. Explain Border Gateway protocol. 10

b. Explain IPV6 header format. 6

c. Write a note on multicast address. 4

6. a Explain PIM-SM and PIM-SSM multicast routing algorithms. 10

b. Explain MPLS with example. 10

UNIT - IV

7 a. Explain End-to-End issues in Internet. 10

b. Explain TCP-state transition diagram. 10

8 a. Explain silly window syndrome and Nougli's algorithm. 10

b. Explain the following : 10

i) Karn/Partridge algorithm ii) Jacobion / Karel's algorithm.

UNIT - V

9 a. Explain the following TCP congestion control mechanisms :

i) Slow start 12

ii) AIMD.

b. Explain fair queuing discipline. 8

10 a. Explain the following congestion avoidance mechanisms :

i) DEC Bit 12

ii) RED.

b. Explain the four key mechanisms of integrated services. 8

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