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

(An Autonomous Institution affiliated to VTU, Belgaum)

Sixth Semester, B.E. - Computer Science and Engineering

Semester End Examination; June - 2016

Computer Networks

Time: 3 hrs

Max. Marks: 100

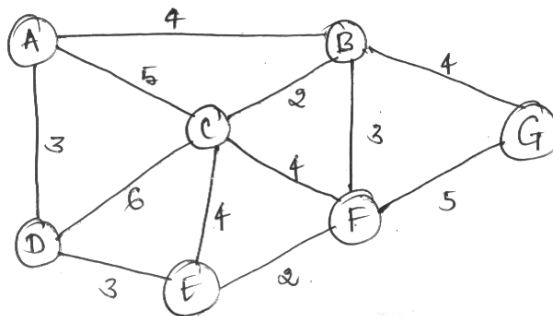
Note: Answer FIVE full questions, selecting ONE full question from each unit.

### UNIT - I

- 1 a. List and explain different Network layer services. 8
- b. An organization is granted a block of addresses 14.24.74.0/24. The organization needs to have 3 subblocks of addresses to use in its three subnets. One subblock of 10 addresses, one subblock of 60 addresses and one subblock of 120 addresses. Design the subblocks. 8
- c. Write a note on DHCP. 4
- 2 a. What is a data gram approach? List the type of service adaptability of datagram. 10
- b. Explain the operation of NAT with an example. 10

### UNIT - II

- 3 a. What is count to infinity problem? How it can be overcome? Explain. 10
- b. Use Dijkstra's algorithm to find the shortest tree and the forwarding table for node A.



- 4 a. How multicasting differs from unicasting? List the advantages of multicasting. 10
- b. Explain in detail two approaches of multi-casting. 10

### UNIT - III

- 5 a. Brief out the concept of Encapsulation and Decapsulation. 10
- b. Explain Go Back N Protocol by deriving the concept of piggy backing. 10
- 6 a. What is UDP? Briefly explain the services provided by UDP. 10
- b. Describe different phases of TCP operation. 10

### UNIT - IV

- 7 a. What are sockets? Summarize how sockets play a vital role in client and server process with necessary diagram? 10

- b. Write a note on :
  - (i) Recursive resolution 10
  - (ii) Iterative resolution.
- 8 a. What is FTP? Explain the basic model of FTP with a neat diagram. 10
- b. Compare and contrast local logging versus remote logging. 10

**UNIT - V**

- 9 a. List and explain different data flow characteristics. 8
- b. Define policing. Explain how Leaky Bucket algorithm works? 8
- c. Mention and define different security goals of a network. 4
- 10 a. Assume Bob, using the RSA cryptosystem, selects  $p = 11$ ,  $q = 13$ ,  $d = 7$ . Compute 'e' and cipher text for the message  $M = 10$ . 10
- b. Explain different modes of IPsec. 10

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