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

(An Autonomous Institution affiliated to VTU, Belagavi)

**Sixth Semester, B.E. - Electronics and Communication Engineering**

**Semester End Examination; May/June - 2018**

**Computer Communication and Networks**

Time: 3 hrs

Max. Marks: 100

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

### UNIT - I

- 1 a. Define the following terms with respect to computer networks : 5  
     i) Host      ii) Client      iii) Server      iv) Switch      v) Protocol
- b. With necessary diagrams, compare Circuit Switched Network and Packet Switched Network. 5
- c. Discuss the layered TCP/IP model. 10
- 2 a. Comment on Internet standards. 5
- b. What are the three services provided by the Transport Layer for communication? 5
- c. With a net diagram, describe Client-Server and Peer-to-Peer paradigms. 10

### UNIT - II

- 3 a. With required formats, explain HTTP request and response messages. 10
- b. With suitable example, clearly explain cookie mechanism. 10
- 4 a. Explain the process of FTP communication over data connection operation. 10
- b. Explain the concept of Network Virtual Terminal (NVT) with NVT character format. 5
- c. What is DNS? Explain Domain name space. 5

### UNIT - III

- 5 a. Describe Go-back-N Protocol with required FSM model. 10
- b. Explain TCP connection establishment by three-way handshaking procedure. 10
- 6 a. Write the TCP segment format and explain its components. 10
- b. Clearly explain how congestion can be handled by TCP in the network? 10

### UNIT - IV

- 7 a. With a neat diagram, explain the internal architecture of router. 10
- b. With frame format, describe fields in IPV4 datagram. 5
- c. What are the services provided by the network layer? 5
- 8 a. What is IP address space? Analyze the classful and classless addressing mechanisms. 10
- b. Identify the need for Network Address Translation (NAT) in IPV4 and explain it briefly. 10

Contd...2

## UNIT - V

- 9 a. A pure ALOHA network transmits 200 bit frames on a shared channel of 200 kbps, what is the throughput, if the system produces, i) 1000 frames per second, ii) 500 frames per second and iii) 250 frames per second. 5
- b. With respect to controlled access, explain the concepts of reservation, polling and token passing. 10
- c. Explain PPP frame format. 5
- 10 a. Describe the following : 10
- i) Link layer switches 10
- ii) Repeaters
- b. Explain the two transfer modes of HDLC. Write the frame format of HDLC and explain its fields in detail. 10

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