PRACTICE PAPER 3

Computer Network

Paper / Subject Code: 48891

Time: 3 hours   **Max. Marks: 80**

N.B. (1) Question one is Compulsory.
    (2) Attempt any 3 questions out of the remaining.
    (3) Assume suitable data if required.

Q. 1

a) Explain why there is need for layered designing for networking and communication. **[05 marks]**

b) Write short note on Parity check and error detection mechanism. **[05 marks]**

c) Explain the different classes of IPv4 addressing technique. **[05 marks]**

d) Find the error, if any, in the following IPv4 addresses: (i) 111.56.045.78 (ii) 221.34.7.8.20 (iii) 75.45.301.14 (iv) 11100010.23.14.67 **[05 marks]**

Q. 2

a) Explain OSI reference model with neat diagram. Compare the layers of OSI model and TCP/IP model. **[10 marks]**

b) Illustrate with diagram the details for Co-axial cable. State any 5 comparative characteristics of co-axial cable with fiber optics and twisted pair cables. **[10 marks]**

Q. 3

a) What is Channel allocation problem? Explain CSMA/CD protocol. A network with CSMA/CD has 100 Mbps bandwidth and 25.60 microsecond maximum propagation delay. What is the minimum frame size? **[10 marks]**

b) Explain Cisco Service Oriented Network Architecture (SONA) in detail. **[10 marks]**

Q. 4

a) Compare and contrast between (i) IPv4 vs IPv6 (ii) Connection oriented protocol vs Connectionless protocol **[10 marks]**

b) Differentiate between Routed and Routing protocols. Also depict the classification of routing algorithms. **[10 marks]**

Q. 5

a) What is SDN? Explain SDN Building Blocks with different OpenFlow messages. **[10 marks]**

b) Elaborate TCP flow control mechanism with example. Explain TCP Timers. **[10 marks]**

Q. 6

Write a short note on:

a) FTP **[05 marks]**

b) SMTP **[05 marks]**

c) Telnet **[05 marks]**

d) Cisco Hierarchical model for network design **[05 marks]**

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