Time: 3 hours   Max. Marks: 80

N.B. (1) Question no one is Compulsory.
   (2) Attempt any 3 questions out of the remaining.
   (3) Assume suitable data if required.

Q. 1 a) Explain LAN, MAN and WAN   05

   b) 4-bit data bits with binary value 1010 is to be encoded using even parity   05
       Hamming code what is the binary value after encoding?

   c) Find the error, if any, in the following IPV4 address.   05

       (i) 111.56.045.78   (ii) 221.34.7.8.20
       (iii)75.45.301.14   (iv) 11100010.23.14.67

 d) Explain Simple Mail Transfer Protocol (SMTP)   05

Q. 2 a) Explain OSI/ISO reference model & compare it with TCP/IP reference model.   10

   b) Define guided transmission media? Illustrate with diagram the details for   10

      Co-axial cable? State any 5 comparative characteristics of co-axial cable with

      fiber optics and twisted pair cables.

Q. 3 a) Explain sliding window protocol using GO Back-N technique.   10

   b) Explain Classful and Classless IPV4 addressing   10

Q. 4 a)) Explain how collision handled in CSMA/CD? A 2km long broadcast LAN uses   10

      CSMA has 10^7 bps bandwidth and uses CSMA/CD. The signal travels along the

      wire at 2×10^8 m/s what is the minimum packet size that can be used on this network?

   b) Explain in Brief: 10

      (i) Telnet   (ii) TCP Timers

Q. 5 a) Explain Link State Routing with suitable example.   10

    b) Explain in brief classic three-layer Hierarchical model for network design by Cisco   10

Q. 6 Write a short note on :

   a)   FTP   05

   b)   Cisco SONA Architecture   05

   c)   Open Flow Controllers of SDN   05

   d)   Architecture of NoX with its functionality   05

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