

- (g) Explain the need for minimum and maximum frame length restriction on a frame in Ethernet MAC sublayer protocol. (2)
- (h) Give a comparison of Virtual circuit and Datagram subnets. (4)
- (i) What is DHCP and how it is better from BOOTP ? (2)
- (j) Explain the problems associated with Remote Procedure Calls. (4)
- (k) What are the steps executed at the client side when a URL is accessed ? (2)
- (l) Give four HTTP request methods and their description. (2)

SECTION – B

- 2. (a) Draw the graph of NRZ-L scheme using the following two data streams :
 - (i) 00110011
 - (ii) 01010101 (3)
 - (b) Explain Manchester encoding. What are the advantages of using Manchester encoding over NRZ-1 encoding ? (3)
 - (c) Why do we need Guard bands in frequency division multiplexing ? (2)
 - (d) Five channels each with a 100 KHZ bandwidth are to be multiplexed together. What is the minimum bandwidth of the link if there is a need for a guard band of 10 KHZ bandwidth channels to prevent interference ? (2)
- 3. (a) Using an example, compare Go back N Sliding window protocol and Selective Repeat Sliding window protocol. (5)

- (b) Give a brief description of Contention algorithm used in MAC sublayer. (3)
- (c) Define DNS and give one example each of absolute and relative domain names. (2)
4. (a) What is PPP protocol and its features ? Also give its frame format. (5)
- (b) Give a brief description of HHTP message headers and their types. (3)
- (c) Give the standard ports and use of the following protocols :
- (i) FTP
 - (ii) POP-3
 - (iii) SMTP
 - (iv) Telnet (2)
5. (a) Define flow control and its types. (3)
- (b) An 8-bit byte with binary value 10101111 is to be encoded using an even parity Hamming code. What is the binary value after encoding ? (3)
- (c) Differentiate between adaptive and non-adaptive routing. (2)
- (d) Explain in brief store and forward packet switching. (2)
6. (a) Explain the layering structure of TCP protocol suite. (4)
- (b) Explain the following brief :
- (i) ADSL
 - (ii) Division of coaxial cable band by CATV. (2+2)

- (c) Differentiate between non-persistent and p-persistent CSMA. (2)
7. (a) Explain the process of TCP connection establishment and release. (5)
- (b) Give the IP header frame format and explain its fields. (5)