210

Registration No :

Total Number of Pages : 02

B.Tech
PCS6G001

6th Semester Regular / Back Examination 2018-19
COMPUTER NETWORK AND DATA COMMUNICATION
BRANCH : CSE
Time : 3 Hours
Max Marks : 100
Q.CODE : F892
Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.
The figures in the right hand margin indicate marks.

Part- I

Q1	**Only Short Answer Type Questions (Answer All-10)**	**(2 x 10)**
a)	Distinguish between half duplex and full duplex modes of communication?	
b)	The datalink layer is divided into which sub-layers?	
c)	How cyclic codes differ from block codes?	
d)	What is the minimum hamming distance? Find the minimum Hamming distance for the following cases:	

i) Detection of 3 errors & Correction of 2 errors.
ii) Detection of 6 errors & Correction of 2 errors.

e)	What is piggybacking? Why is it used?	
f)	Define Shannon capacity? Where is it used?	
g)	What is dotted decimal notation in IPv4. How many numbers of bytes are required to represent an address in dotted decimal notation?	
h)	What is closed-loop congestion control technique?	
i)	What is address resolution? Name the protocol that does this.	
j)	What is a proxy server and how is it related to HTTP?	

Part- II

Q2	**Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)**	**(6 x 8)**
a)	Explain the Pulse Code Modulation technique.	
b)	Illustrate the MLT-3 line coding scheme with the help of the "transition state diagram". Encode the bit pattern 0101110110 using MLT-3 encoding scheme.	
c)	Discuss the different time division multiplexing techniques. How variable data rates are managed in synchronous TDM?	
d)	Describe the structure of IP datagram and explain the function of each field in the context of the IP protocol.	
e)	Explain the principle of operation of CSMA/CD MAC used in LAN.	
f)	Discuss the advantages of IPv6 over IPv4. Explain the transition strategies to move from IPv4 to IPv6.	
g)	How does UDP function? What is the minimum and maximum size of the upper layer data that can be encapsulated in a UDP datagram?	
h)	What is transmission impairment? Discuss the different types of transmission impairments.	
i)	What is packet switching? Discuss the datagram and virtual circuit approach of packet switching.	
j)	What is FTP? Why is it required? Discuss the stages of operations of FTP.	
k)	Discuss the CRC error detection technique. How polynomials are useful in CRC?	
l)	Explain with diagram, the PPP transition phases. Name the network layer protocols used by PPP to carry out the phases.	

Part-III
### Only Long Answer Type Questions (Answer Any Two out of Four)

Q3 What is a topology? Discuss the various types of network topologies with proper diagrams.Mention the advantages, disadvantages and uses of each. **(16)**

Q4 Describe the TCP/IP network model mentioning the functionality of each layer. How do the layers of TCP/IP model correlate to the layers of the OSI model? **(16)**

Q5 What is routing? How is it related to forwarding? Explain the distance vector routing algorithm in detail and using the algorithm construct the routing table for node E in the following given network.
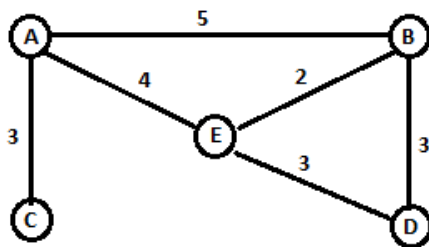
Q6 Explain in detail E-mail architecture with a suitable example. **(16)**