Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University)

B. Tech (Fifth Semester) Regular Examinations, November – 2024

22BCSPC35001/22BCDPC35001 – Computer Networks

(CSE, CSE(DS))

Time: 3 hrs   Maximum: 70 Marks

(The figures in the right-hand margin indicate marks)

PART – A   (2 x 5 = 10 Marks)

Q.1. Answer **ALL** questions

		CO #	Blooms Level
a.	How is full-duplex communication different from half duplex communication?	CO1	K2
b.	Convert the following CRC polynomial divisor into binary bits $X^4 + X^2+X+1$ ii) X^7+X^3+X+1	CO2	K2
c.	Differentiate between CSMA/CD and CSMA/CA.	CO2	K2
d.	What is the starting address of the network if one of the IP address of the block is 165.45.78.40/27	CO3	K3
e.	A message is received by transport layer of 1GB from upper layer. Is it necessary to do segmentation? If yes, then justify why?	CO4	K3

PART – B   (15 x 4 = 60 Marks)

Answer **All** the questions

		Marks	CO #	Blooms Level
2. a.	By using Unipolar RZ, Polar-NRZ, Bipolar-RZ, NRZ-I and Manchester encoding techniques, encode the following binary data to digital signal 1101100	8	CO1	K3
b.	What is switching in network? Elaborate all the switching techniques with examples.	7	CO1	K1
	(OR)			
c.	Draw and explain the OSI model of computer network.	8	CO1	K2
d.	How different line coding techniques are used for converting digital data into digital signal explain with example?	7	CO1	K1
3.a.	Apply CRC method to check whether the data 11100101 is having any error or not where the divisor polynomial is given as X^3+X+1.	8	CO2	K2
b.	Explain the working of simple bit parity check. Using simple bit parity check whether the data at receiver's end 100011 has error or not when the data at sender's end is 100001.	7	CO2	K2
	(OR)			
c.	Using Hamming code to show the position of error if data is sent 110011 and data is received 111011.	8	CO2	K2
d.	How HDLC protocol is different from PPP protocol?	7	CO2	K1
4.a.	The UDP header in hexadecimal format is as : BC82000D002B001D Obtain the following from it: (i) Source port number (ii) Destination port number	8	CO3	K1

(iii) Total length

(iv) Length of the data.

(v) Name of client process.

b.	How CSMA technique is used for multiple access control?	7	CO3	K1

<center>(OR)</center>

c.	Find the sub network address and the host-ID for the following	8	CO3	K3

    (i)   IP Address – 120.14.22.16 & Mask- 255.255.128.0

    (ii) IP Address – 140.11.36.22 & Mask- 255.255.255.0

    (iii) IP Address – 141.181.14.16 & Mask- 255.255.224.0

    (iv) IP Address – 200.34.22.156 & Mask- 255.255.255.240

d.	Describe the IPv6 packet format.	7	CO3	K1
5.a.	Explain different mechanisms used in congestion control.	7	CO4	K2
b.	Write short notes on HTTP.	8	CO4	K2

<center>(OR)</center>

c.	How congestion control is related to quality of service ?	7	CO4	K2
d.	How is DNS used to access the internet ?	8	CO4	K2

<center>--- End of Paper ---</center>