Roll No.	2	0	2	2	2	0	4	9	7	

NIST INSTITUTE OF SCIENCE & TECHNOLOGY
(Autonomous)

B.Tech 3rd Semester (2022 Batch)				Branch(s)	CSE/IT/CST
Subject Code	*22CS3PC02T*	Subject Name		*Computer Network and Data communication*	
Time	*90 min*	Exam	Mid Semester	Max. Marks	50
Examination Superintendent		Prof. Chittaranjan Biswal			
Name of the Instructor(s)		*Prof.R. K. Shial, Prof.S. Mishra, Prof. B.S.Gouda,Proj. M.Sahu, Dr.P. Pradhan,Prof.B. Mishra*			
Date of Examination		*23-11-2023*	Sitting	2nd Sitting	

Answer Question No.1 from **PART-I** ***which is compulsory, any four from PART-II and any one from*** **PART-III.**

The figures in the right hand margin indicate marks.

PART-I

(Answer all the questions)

Q1.		CO	Level	Level-1: Knowledge Level-2: Comprehension Level-3: Application Level-4: Analysis Level-5: Synthesis Level -6: Evaluation	2 X 5
	(a)	1	2	Difference between point to point and multipoint connection.	2
	(b)	1	3	Six channels, each with a 100khz bandwidth are to be multiplexed together. What is the minimum bandwidth of the link if there is a need for a guard band of 10khz between the channels to prevent interference?	2
	(c)	1	2	Differentiate betweemn MAC address and logical address..	2
	(d)	2	2	What is piggybacking?	2
	(e)	2	3	What is hamming distance? Find the minimum hamming distance for the given pair of words: (101101,010101).	2

PART-II

(Answer Any Four questions out of six)

Q2.		CO	Level	Level-1: Knowledge Level-2: Comprehension Level-3: Application Level-4: Analysis Level-5: Synthesis Level -6: Evaluation	4 X 6
	(a)	1	2	Draw and Explain different types of topology with their advantages and disadvantages.	6
	(b)	1	3	Explain Manchester and differential Manchester. Show the Manchester and differential Manchester encoding of the bit pattern given below: 10110101	6
	(c)	3	3	Describe the structure of IP address and explain how the address space is divided into different classes in the context of IPv4 addressing.	6
	(d)	2	2	What is HDLC? Explain different types of frames in HDLC.	6
	(e)	2	3	Construct the Hamming code for the bit sequence 110101011	6
	(f)	2	3	Explain ALOHA network with flowchart.	6

PART-III

(Answer Any One question out of two)

		CO	Level	Level-1: Knowledge Level-2: Comprehension Level-3: Application Level-4: Analysis Level-5: Synthesis Level -6: Evaluation	1 X 16
Q3.	(a)	1	2	Draw and explain briefly all the function of the OSI layers.	8
	(b)	2	3	What is the operation of CRC? Given a 10-bit sequence 1101011101 and a divisor of 1011, find the CRC. Verify your answer	8
Q4.	(a)	2	3	Explain stop and wait ARQ. Differentiate between Stop and wait ARQ and Go Back N-ARQ.	8
	(b)	1	2	Explain Time division multiplexing. Differentiate between TDM and FDM.	8