Roll No.

NATIONAL INSTITUTE OF TECHNOLOGY, KURUKSHETRA
THEORY EXAMINATION

Month and Year of the Examination: **May - 2024**

Programme: **B.Tech (Computer Engg)** Semester...4th

Subject...Computer Network Time allowed.....3hrs...

Subject Code.....CSPC-202 Maximum Marks...50

Note:- Candidate is required to attempt all 5 questions. Marks are written in front of each question.

Q-1	a)	How to convert analog signal to digital? Explain with suitable example.	[4]
	b)	Write the difference between guided and unguided transmission media.	[3]
	c)	Draw the graph for digital signal 0100101011 using the NRZ-I, Manchester and differential Manchester scheme.	[3]
Q-2	a)	What is CSMA/CD? How does it work? Distinguish between 1-Persistent, non-Persistent and P-persistent CSMA. Also explain how to avoid collision in wireless LAN?	[4]
	b)	The message 11001001 is to be transmitted using the CRC polynomial x^3 + 1 to protect it from errors. Calculate codeword which should be transmitted. Suppose third bit from left encounter with an error, how to detect error at receiving end?	[4]
	c)	Explain Port and MAC Address in detail.	[2]
Q-3	a)	An Internet Service Provider (ISP) has the following chunk of CIDR-based IP addresses available with it:245.248.128.0/20. The ISP wants to give half of this chunk of addresses to Organization A, and a quarter to Organization B, while retaining the remaining with itself. Write the correct allocation of addresses to A and B.	[5]
	b)	Explain and differentiate between link state and distance vector routing protocols with suitable example.	[5]
Q-4	a)	Discus the various difference between TCP and UDP. Why UDP is faster than TCP. Also discuss TCP header.	[6]
	b)	Discuss the OSI model with functions of each layer.	[4]
	c)	Explain IPv4 header with its field. Which filed in IPv4 header concern about fragmentation and reassembly?	[2]
Q-5		Write Short Notes on following (any four) : (i) Go back to N protocol (ii) IP classful Addressing (iii) Selective repeat protocol	[10]