Programme: **B.Tech.**
Course Name: **Computer Networks**
Maximum Marks: **30**

Year/Semester: **2nd/ 4th**
Course Code: **ECN 207**
Time Allowed: **90 min**

Note: All questions are compulsory.

		Marks
1.	(a) Discuss about functioning of physical layer.	1
	(b) Differentiate between TCP/IP model and OSI model.	2
	(c) Draw the hybrid topology with 3 Mesh Networks and one Star networks, where Star network should be as backbone network.	2
2.	(a) We need to send 280 kbps over a noiseless channel with a bandwidth of 20kHz. How many signal levels do we need?	1
	(b) Why do we need scrambling? Discuss about B8ZS scrambling scheme.	2
	(c) A telephone subscriber using PCM encoder with quantization error has SNR(dB) above 40. What is minimum number of bits per sample?	2
3.	(a) Tabulate the modulation schemes for communication of analog information and digital data, considering Analog Transmission.	2
	(b) Discuss about bandwidth requirement of BFSK modulation scheme.	1
	(c) Differentiate between multiplexing and spreading.	1
	(d) Differentiate between synchronous TDM and Statistical TDM.	1
4.	(a) Classify the unguided transmission media in broad groups and discuss about their applications.	2
	(b) Discuss about time slot interchange in Time Division switch.	1
	(c) In the structure of multistage circuit switch, what is Clos Criteria and why it is important?	2
5.	(a) Discuss the relationship of minimum Hamming distance with number of error detection and number of error correction in block coding.	2
	(b) Decode the CRC (cyclic redundancy code) code-word 1011110 assuming the divisor 1011 and last three bits as redundant bits. What is syndrome value? Will the data-word be accepted or discarded at receiver	3
6.	Explain Go-Back-N ARQ (Automatic Repeat request) protocol in detail in all following aspects	1
	(i) Events on sender side and receiver side	1
	(ii) Sequencing of frames	2
	(iii) Sliding windows	
	(iv) Timer and Acknowledgement	1