BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP/2025)

CLASS: BTech. **SEMESTER : VI**
BRANCH: ECE **SESSION : SP/2025**

SUBJECT: IT365 DATA COMMUNICATION AND COMPUTER NETWORKS

TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

			CO	BL
Q.1(a)	What are the main types of transmission modes?	[2]	1	1
Q.1(b)	What are the key components of a data communication system? Explain each components in details.	[3]	2	2
Q.2(a)	Explain the functions of Data Link Layer.	[2]	1	1
Q.2(b)	Differentiate between OSI and TCP/IP reference model.	[3]	2	2
Q.3(a)	What is "signal-to-noise ratio" (SNR), and why is it important in assessing transmission quality?	[2]	2	2
Q.3(b)	Name and briefly explain the primary types of transmission impairments.	[3]	2	2
Q.4(a)	What are the primary advantages and disadvantages of guided media over unguided media?	[2]	2	3
Q.4(b)	What is the principle of Delta Modulation (DM), and how does it relate to PCM (Pulse Code Modulation)?	[3]	3	4
Q.5(a)	What is a **parity bit**, and how does it help detect errors?	[2]	3	3
Q.5(b)	What is **cyclic redundancy check (CRC)**, and how does it detect errors?	[3]	3	3

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