

**PNS SCHOOL OF ENGINEERING & TECHNOLOGY  
MARSHAGHAI, KENDRAPARA**

BRANCH-ETC	SEMESTER-05	NAME OF THE TEACHING FACULTY: ER.AMARENDRA SAHOO
SUBJECT: ANALOG & DIGITAL COMMUNICAT ION	NO. OF DAYS PER WEEK: CLASS ALLOTTED-05	SEMESTER FROM DATE: 01.08.23 -30.11.23
WEEK	UNIT	THEORY TOPICS
1	UNIT-1 Elements of Communication Systems.	<b>UNIT-1: Elements of Communication Systems.</b>
		Source of information & Communication Channels
2	Unit-2: Amplitude (linear) Modulation System	Classification of Communication systems
		Modulation Process, Need of modulation and classify Analog and Digital Signals & its conversion.
3	Unit-2: Amplitude (linear) Modulation System	Basic concept of Signals & Signals classification
		Bandwidth limitation
4	Unit-2: Amplitude (linear) Modulation System	REVISION/TEST/DOUBT CLEARING
		Amplitude modulation & derive the expression for amplitude power relation in AM
5	Unit-2: Amplitude (linear) Modulation System	find Modulation Index.
		Generation of Amplitude Modulation(AM)- AM modulation only
6	Unit-3: Angle Modulation Systems.	Demodulation of AM waves -liner diode detector, square law detector & PLL
		REVISION/TEST/DOUBT CLEARING
7	Unit-3: Angle Modulation Systems.	Explain SSB signal
		DSBSC signal
8	Unit-3: Angle Modulation Systems.	Methods of generating & detection SSB-SC signal
		Methods of generation DSB-SC signal
8	Unit-3: Angle Modulation Systems.	detection of DSB-SC signal
		Synchronous detection
8	Unit-3: Angle Modulation Systems.	Concept of Balanced modulators
		Vestigial Side Band Modulation
8	Unit-3: Angle Modulation Systems.	REVISION/TEST/DOUBT CLEARING
		<b>Unit-3: Angle Modulation Systems.3.1 Concept of Angle</b>
8	Unit-3: Angle Modulation Systems.	Basic principle of Frequency Modulation
		Frequency Spectrum of FM Signal.
8	Unit-3: Angle Modulation Systems.	Expression for Frequency Modulated Signal
		Explain Phase modulation & difference of FM & PM)- working principle with Block Diagram
8	Unit-3: Angle Modulation Systems.	Compare between AM and FM modulation
		Advantages & Disadvantages
8	Unit-3: Angle Modulation Systems.	Methods of FM Generation (Indirect Armstrong) method only)
		Methods of FM Demodulator Forster-Seely method
8	Unit-3: Angle Modulation Systems.	Radio detector- working principle with Block diagram
		<b>Unit-4: AM &amp; FM TRANSMITTER &amp; RECEIVER</b>
8	Unit-3: Angle Modulation Systems.	Define the terms Selectivity, Sensitivity, Fidelity and Noise

9	Unit-4: AM & FM TRANSMITTER & RECEIVER	Analog Pulse Modulation - Generation and detection of PPM system with the help of Block diagram & comparison
10		Concept of Quantization of signal & REVISION/TEST/DOUBT CLEARING unit- 3
		Generation & Demodulation of PCM system with Block applications PCM
		Companding in PCM & Vocoder
11	Unit-5: ANALOG TO DIGITAL CONVERSION & PULSE MODULATION SYSTEM	Multiplexing & Time Division Multiplexing & explain the Generation & demodulation of Delta modulation
		Generation & demodulation of DPCM with Block diagram.
Comparison between PCM, DM, ADM & DPCM		
12		<b>Unit-5: ANALOG TO DIGITAL CONVERSION &amp; PULSE</b>
		Sampling Techniques ( Instantaneous, Natural, Flat Top)
13		Analog Pulse Modulation - Generation and detection of PAM, REVISION/TEST/DOUBT CLEARING
		PPM system with the help of block diagram
		Block diagram & comparison of all above.
		REVISION/TEST/DOUBT CLEARING
		Unit-6: DIGITAL MODULATION TECHNIQUES
	Basic concept, Transmitter & Receiver & Digital modulation	
14	Unit-6: DIGITAL MODULATION TECHNIQUES	Digital modulation techniques & types
		Generation and Detection of binary ASK, FSK, PSK, QPSK
QAM, MSK, GMSK.		
Working of T1-Carrier system		
Working operation of Spread Spectrum Modulation		
Working operation of Spread Spectrum Modulation Techniques		
Define bit, Baud, symbol channel capacity formula. (Shannon)		

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