

ACADEMIC PLAN & UNITIZATION OF SYLLABUS

Department of PHYSICS

**Bankura Christian College**

ACADEMIC YEAR 2023-24 (**Semester -VI**)

6th Semester (March to June)

**DSE T8 - Communication Electronics**

**2. Analog Modulation**

Amplitude Modulation, modulation index and frequency spectrum. Generation of AM (Emitter Modulation), Amplitude Demodulation (diode detector), Concept of Single side band generation and detection. Frequency Modulation (FM) and Phase Modulation (PM), modulation index and frequency spectrum, equivalence between FM and PM, Generation of FM using VCO, FM detector (slope detector), Qualitative idea of Super heterodyne receiver  
Analog Pulse Modulation

Channel capacity, Sampling theorem, Basic Principles- PAM, PWM, PPM, modulation and detection technique for PAM only, Multiplexing.

**3. Digital Pulse Modulation**

Need for digital transmission, Pulse Code Modulation, Digital Carrier Modulation Techniques, Sampling, Quantization and Encoding. Concept of Amplitude Shift Keying (ASK), Frequency Shift Keying (FSK), Phase Shift Keying (PSK), and Binary Phase Shift Keying (BPSK).

MONTH/YEAR	WEEK	PORTIONS
March 23	3	Introduction, Amplitude Modulation, modulation index and frequency spectrum.
	4	Generation of AM (Emitter Modulation), Amplitude Demodulation (diode detector), Concept of Single side band generation and detection.
	5	Frequency Modulation (FM) and Phase Modulation (PM), modulation index and frequency spectrum,
MONTH/YEAR	WEEK	PORTIONS
April 23	1	Equivalence between FM and PM, Generation of FM using VCO, FM detector (slope detector),
	2	Qualitative idea of Super heterodyne receiver Analog Pulse Modulation
	3	Revision with Previous year question discussion
	4	Unit Test
	5	Channel capacity, Sampling theorem, Basic Principles- PAM, PWM, PPM.
MONTH/YEAR	WEEK	PORTIONS
May 23	1	Modulation and detection technique for PAM only, Multiplexing.
	2	Revision with Previous year question discussion

	3	Revision with Previous year question discussion
	4	Unit Test
	5	Need for digital transmission, Pulse Code Modulation, Digital Carrier Modulation Techniques.
MONTH/YEAR	WEEK	PORTIONS
June 23	1	Sampling, Quantization and Encoding.
	2	Concept of Amplitude Shift Keying (ASK), Frequency Shift Keying (FSK).
	3	Phase Shift Keying (PSK), and Binary Phase Shift Keying (BPSK).
	4	Revision with Previous year question discussion
	5	Unit Test

*Dhakshiny*

06.03.2023