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(Revision – 2021)

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Reg. No……
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2024

PRINCIPLES OF ELECTRONIC COMMUNICATION

[Maximum Marks: **75**] [Time: **3** Hours]

PART-A

I. Answer '*all*' the following questions in one word or one sentence. Each question carries '*one*' mark.

(9 x 1 = 9 Marks)

		Module Outcome	Cognitive level
1.	Define Amplitude Modulation.	M1.02	U
2.	Write the mathematical expression of Frequency Modulation (FM).	M1.03	U
3.	Define modulation index in Amplitude Modulation (AM).	M1.04	A
4.	Write the equation for calculating sampling rate.	M2.01	U
5.	Define Pulse Code Modulation (PCM).	M2.02	U
6.	Name the circuit used in transmitter for boosting the high frequency signals.	M3.01	U
7.	Define De-Emphasis in FM transmitter.	M3.01	U
8.	Name a circuit used for AM demodulation.	M4.03	U
9.	Define selectivity in radioreceivers.	M4.01	R

PART-B

II. Answer any '*eight*' questions from the following. Each question carries *'three'* marks.

(8 x 3 = 24 Marks)

		Module Outcome	Cognitive level
1.	Solve the equation for bandwidth in AM.	M1.04	A
2.	Name different types of analog modulation techniques.	M1.01	U
3.	Outline the radiation pattern in an antenna.	M2.03	U
4.	State sampling theorem.	M2.01	U
5.	List the applications of microwave antenna.	M2.03	U
6.	Draw the circuit for Pre-Emphasis in FM.	M3.01	U
7.	Define sensitivity and fidelty in radio receivers.	M4.01	R
8.	Draw the circuit of AM Collector modulator.	M4.03	U
9.	Draw the circuit of low level transmitter in AM.	M3.01	U
10.	Outline the concept of choice of Intermediate Frequency (IF) in radio receivers.	M4.02	U

PART-C

Answer '*all*' questions from the following. Each question carries *'seven'* marks.

(6 x 7 = 42 Marks)

		Module Outcome	Cognitive level
III.	Derive the expression for AM modulated signals and draw the AM waveform.	M1.02	U
	OR		
IV.	Compare different parameters of DSBSC, VSB and SSB systems in AM.	M1.02	U
V.	Describe the generation of PWM signals.	M2.02	U
	OR		
VI.	Compare AM and FM.	M1.04	A
VII.	Compare various pulse modulation techniques.	M2.02	U
	OR		
VIII.	Explain the gain, band width, and radiation pattern of antennas in communication system.	M2.03	U
IX.	Explain AM collector modulator with a diagram.	M3.02	U
	OR		
X.	Explain internal noise, external noise and signal to noise ratio in communication systems.	M3.03	U
XI.	Explain Superhetrodyne receiver in AM with a diagram.	M4.02	U
	OR		
XII.	Describe simple and delayed AGC in AM demodulator circuit.	M4.03	U
XIII.	Explain FM receiver with a diagram.	M4.03	U
	OR		
XIV.	Explain high level AM transmitter with a diagram.	M3.01	U

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