23ELU413N/23ELU413

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2025
(Fourth Semester)

Branch – **ELECTRONICS**

ELECTRONIC COMMUNICATION - I

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Question No.	Question	K Level	CO
1	When the AM modulation is 100% then signal amplitude is ____carrier amplitude a) Less than b) Greater than c) equal to d) not equal	K1	CO1
2	Show the the modulation index of AM ? a) m=Vm/Vc b) m= Vc/Vm c) m=fc + Kei d) m=δ/fi	K2	CO2
3	Which one of the following cannot be used to remove the unwanted side band in SSB? a) filter system b) phase-shift method c) third method d) balanced modulator	K1	CO1
4	Which modulation technique uses the minimum channel bandwidth and transmitted? a) FM b) DSB-SC c) VSB d) SSB	K2	CO2
5	What is De-emphasis? a) Is restoring of original signal power b) Is done at the detector output of the receiver c) Is the inverse process of Pre emphasis d) All of the above	K1	CO1
6	Outline the category of Armstrong method. a) Direct FM b) Indirect FM c) Direct AM d) indirect AM	K2	CO2
7	What is the Standard intermediate frequency used for AM receiver? a) 455 MHz b) 455 KHz c) 455 GHz d) 455 Hz	K1	CO1
8	Outline the use of Phase-locked loop a) FM demodulator b) AM demodulator c) FM receiver d) AM receiver	K2	CO2
9	Which pulse modulation technique is digital? a) Pulse amplitude modulation b) Pulse width modulation c) Pulse position modulation d) Pulse code modulation	K1	CO1
10	What is the sampling frequency rate? a) Fs ≥2Fm b) Fs=2Fm c) Fs≤2fm d) Fs<4Fm	K2	CO2

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Question No.		Question	K Level	CO
11	a)	Draw the communication system block diagram and explain.	K3	CO1
		OR		
	b)	Derive the AM equation and explain the modulation index and Percentage modulation of it.		
12	a)	Explain the Phase method of SSB generation with its block diagram.	K3	CO2
		OR		
	b)	Explain the SSB receiver with a neat block diagram.		
13	a)	Define FM. Explain Pre-emphasis and de-emphasis with its circuit.	K2	CO2
		OR		
	b)	Construct the Varactor diode FM generation circuit and explain.		
14	a)	Elucidate the working of FM receiver with its block diagram.	K4	CO2
		OR		
	b)	Analyze the operation of foster-seeley discriminator with its circuit.		
15	a)	Explain the FSK with neat sketch.	K4	CO3
		OR		
	b)	Analyze the PWM and PPM with its block diagram and waveform.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Question No.	Question	K Level	CO
16	Construct and explain the operation of High and Low level AM Transmitter.	K4	CO1
17	Illustrate the working of FET balanced modulator with its circuit.	K4	CO2
18	Elucidate the working of Armstrong method FM generation with its block diagram.	K4	CO2
19	Examine the working of Super heterodyne receiver with its block diagram.	K4	CO2
20	Analyze the PCM modulation with its block diagram and waveform.	K4	CO3

Z-Z-Z END