

**University of Mumbai**  
**Examination 2020 under cluster 9 (FAMT)**

Program: Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2016

Examination: Second Year Semester IV

Course Code: **ECC405** and Course Name: **Principles of Communication Engineering**

Time: 1 hour

Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	Angle modulation is type of
Option A:	Amplitude
Option B:	Frequency
Option C:	Phase
Option D:	Frequency &Phase
Q2.	Frequency Modulation is type of
Option A:	Frequency to Voltage Conversion
Option B:	Voltage to Frequency Conversion
Option C:	Phase to voltage Conversion
Option D:	Voltage to Phase Conversion
Q3.	Bandwidth of conventional AM is given by
Option A:	$f_m^2$
Option B:	$f_m$
Option C:	$2f_m$
Option D:	$2f_m^2$
Q4.	Modulation index in FM is given by
Option A:	$2f_m$
Option B:	$\Delta F / f_m$
Option C:	$f_m / \Delta f$
Option D:	$4f_m$
Q5.	Narrow Band FM has Modulation Index
Option A:	$\leq 1$
Option B:	$\leq 10$
Option C:	$\leq 100$
Option D:	$\geq -1$
Q6.	Narrow Band FM has Bandwidth given by
Option A:	$f_m$
Option B:	$2f_m$
Option C:	$2nf_m$

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Option D:	4fm
Q7.	Ideally FM have how many sidebands
Option A:	One
Option B:	Two
Option C:	hundred
Option D:	Infinite
Q8.	Pulse Amplitude Modulation is which modulation technique
Option A:	Analog
Option B:	Analog Pulse
Option C:	Digital
Option D:	Digital Pulse
Q9.	PAM Signal is generated by using
Option A:	Natural Sampling
Option B:	Flat Top Sampling
Option C:	Natural Sampling & Flat Top Sampling
Option D:	Non uniform Sampling
Q10.	Which Pulse Modulation Scheme is least affected by noise
Option A:	PAM
Option B:	PWM
Option C:	PPM
Option D:	PWM & PPM
Q11.	To generate PWM by using 555 IC modulating signal voltage is applied to pin number
Option A:	1
Option B:	4
Option C:	5
Option D:	7
Q12.	In sampling theorem If $f_s = f_m$ the condition is called as
Option A:	Over Sampling
Option B:	Critical Sampling
Option C:	Under sampling
Option D:	Fast Sampling
Q13.	In sampling theorem aliasing effect occurred when
Option A:	$f_s < 2f_m$
Option B:	$f_s = 2f_m$
Option C:	$f_s > 2f_m$
Option D:	$f_s \geq 2f_m$

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Q14.	The role of Receiver is to
Option A:	select all the stations
Option B:	rejects all the stations
Option C:	Select desire station & reject all other station
Option D:	Select desire station & reject none
Q15.	AM Bandwidth & Intermediate frequency are respectively
Option A:	10 KHz, 455 Hz
Option B:	200 KHz, 455 KHz
Option C:	10 KHz, 455 KHz
Option D:	200 KHz, 455MHz
Q16.	If super heterodyne Receiver is tuned to 850 KHz , what is Local Oscillator frequency( $f_L$ )_____
Option A:	395 KHz
Option B:	1305 KHz
Option C:	1205KHz
Option D:	1405 KHz
Q17.	Which Pulse modulation technique is digital
Option A:	PAM
Option B:	PWM
Option C:	PPM
Option D:	PCM
Q18.	The role of low pass filter(LPF) prior to Sampler in PCM is
Option A:	Aliasing filter
Option B:	Antialiasing filter
Option C:	Aliasing and Antialiasing filter
Option D:	Non-aliasing filter
Q19.	The number of quantization level & binary bits per sample required For encoding have the following relation
Option A:	$L=2n$
Option B:	$L= 2n-1$
Option C:	$L= 2n-2$
Option D:	$L= 2n-4$
Q20.	Sampling of Band unlimited signal Result in
Option A:	Antialiasing
Option B:	Aliasing
Option C:	oversampling
Option D:	Undersampling

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Q21.	The role of LPF as antialiasing filter is
Option A:	To convert the Band limited signal to band unlimited signal
Option B:	To convert the Band unlimited signal to band limited signal
Option C:	To allows to infinite frequencies
Option D:	To allows to zero frequencies
Q22.	Noise that affect the performance of PCM system is mainly classified as
Option A:	Channel noise
Option B:	Quantization noise
Option C:	Transient time noise
Option D:	Channel noise & Quantization noise
Q23.	Maximum Quantization error is given by
Option A:	$\Delta/2$
Option B:	$\Delta/4$
Option C:	$\Delta$
Option D:	$\Delta*2$
Q24.	The major drawback of PCM system is to reduce quantization error
Option A:	Corresponding channel bandwidth is decreased
Option B:	Corresponding channel bandwidth is increased
Option C:	Corresponding channel bandwidth is constant
Option D:	Corresponding channel bandwidth is variable
Q25.	Quantizer characteristics can be of
Option A:	Midtread
Option B:	Midrise
Option C:	Midfall
Option D:	Midtread & Midrise