

These are sample MCQs to indicate pattern, may or may not appeared in examination

**University of Mumbai**

**Examination 2020**

Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code: ETC 502 and Course Name: Analog Communication

Time: 1-hour

Max. Marks: 50

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

Q1.	Noise voltage $V_n$ and absolute temperature T are related as
Option A:	$V_n = 1/\sqrt{(4RKTB)}$
Option B:	$V_n = \sqrt{(4RK)/(TB)}$
Option C:	$V_n = \sqrt{(4RKTB)}$
Option D:	$V_n = \sqrt{(4KTB)/R}$

Q2.	Signal-to-Noise ratio is calculated as:
Option A:	signal voltage divided by noise voltage
Option B:	signal power divided by noise power
Option C:	first add the signal power to the noise power, then divide by noise power
Option D:	signal power multiplied by noise power

Q3.	A modulation index of 0.5 would be same as
Option A:	0.5 of Modulation Depth
Option B:	1/2% of Modulation Depth
Option C:	5% of Modulation Depth
Option D:	50% of Modulation Depth

Q4.	For low level modulation, amplifier used is
Option A:	Class A
Option B:	Class C
Option C:	Class A & C
Option D:	Class B

Q5.	What happens when the amplitude of the modulating signal is greater than the amplitude of the carrier?
Option A:	Decay
Option B:	Distortion
Option C:	Amplification
Option D:	Attenuation

Q6.	Which of the following is an advantage of SSB over DSB?
Option A:	No change in spectrum space
Option B:	Reduce in spectrum space
Option C:	Carrier is suppressed
Option D:	Power is not wasted on the carrier

Q7.	Which of the following frequency is not transmitted in AM transmission?
Option A:	Upper side band frequency
Option B:	Carrier frequency
Option C:	Lower side band frequency
Option D:	Audio frequency

Q8.	Square Law modulators _____
Option A:	used for angle modulation
Option B:	have linear current-voltage characteristics
Option C:	have nonlinear current-voltage characteristics as well as used for Amplitude Modulation
Option D:	used for frequency modulation

Q9.	What is the main function of a balanced modulator?
Option A:	to limit the noise picked by a receiver
Option B:	to produce balanced modulation of a carrier wave
Option C:	to suppress carrier signal
Option D:	to produce 100% modulation

Q10.	Frequency modulation index defines the relationship between the _____ and bandwidth of transmitted signal.
Option A:	Frequency of message signal
Option B:	Amplitude of message signal
Option C:	Amplitude of carrier signal
Option D:	Frequency of carrier signal

Q11.	With change in modulating frequency ( $f_m$ ), the modulation index $m_p$ of a phase modulated signal will _____.
Option A:	increase
Option B:	decrease
Option C:	remain constant
Option D:	proportional

Q12.	Pre emphasis is done
Option A:	Before modulation
Option B:	Before transmission
Option C:	Before detection at receiver

Option D:	After detection at receiver
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Q13.	The modulation index of FM is given by
Option A:	$\mu = \text{frequency deviation} / \text{modulating frequency}$
Option B:	$\mu = \text{modulating frequency} / \text{frequency deviation}$
Option C:	$\mu = \text{modulating frequency} / \text{carrier frequency}$
Option D:	$\mu = \text{carrier frequency} / \text{modulating frequency}$

Q14.	Calculate the dissipation in power across $50\Omega$ resistor for the FM signal $v(t) = 40 \cos(6600t + 10 \sin 2100t)$
Option A:	20W
Option B:	10W
Option C:	8W
Option D:	5W

Q15.	In a superheterodyne receiver, the IF is 455 kHz. If it is tuned to 1400 kHz, what is image frequency?
Option A:	1855 kHz
Option B:	2310 kHz
Option C:	945 kHz
Option D:	910 kHz

Q16.	An Aliasing error occurs when the Nyquist rate is ----- times the highest frequency component present input analog information signal
Option A:	1.2
Option B:	2
Option C:	2.5
Option D:	3

Q17.	A total of n message each band limited to B, are time division multiplexed using PAM. The minimum bandwidth of the multiplexed will be
Option A:	B
Option B:	B/2
Option C:	n B
Option D:	2nB

Q18.	A distorted signal of frequency $f_m$ is recovered from a sampled signal if the sampling frequency $f_s$ is
Option A:	$f_s > 2f_m$
Option B:	$f_s < 2f_m$
Option C:	$f_s = 2f_m$
Option D:	$f_s \geq 2f_m$

Q19.	It is the first stage of the receiver and is therefore often called the receiver front end.
Option A:	mixer
Option B:	RF section
Option C:	local oscillator
Option D:	IF stage

Q20.	To provide two or more voice circuits with the same carrier, it is necessary to use
Option A:	ISB
Option B:	carrier reinsertion
Option C:	SSB with pilot carrier
Option D:	VSB

Q21.	If a radio receiver amplifies all the signal frequencies equally well, it is said to have high .....
Option A:	Sensitivity
Option B:	Selectivity
Option C:	Distortion
Option D:	Fidelity

Q22.	In a TRF radio receiver, the RF and detection stages are tuned to .....
Option A:	Radio frequency
Option B:	IF
Option C:	Audio frequency
Option D:	Local oscillator frequency

Q23.	The digital modulation technique in which the step size is varied according to the variation in the slope of the input is called
Option A:	Delta modulation
Option B:	PCM
Option C:	Adaptive delta modulation
Option D:	PAM

Q24.	In delta modulation Granular noise occurs when
Option A:	Step size is too small
Option B:	Step size is too large
Option C:	There is interference from the adjacent channel
Option D:	Bandwidth is too large

Q25.	To separate channels in an FDM receiver, it is necessary to use
Option A:	AND gates

Option B:	differentiation
Option C:	bandpass filters
Option D:	integration