

**Program: BE Electronics & Telecommunication Engineering**

**Curriculum Scheme: Revised 2012**

**Examination: Third Year**

**Semester V**

**Course Code: ETC502 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.	What do you understand by the term MODULATION?
Option A:	A way for data and computer communication
Option B:	A method in which one of the properties of a carrier signal varies in proportion to an instantaneous value of modulation signal.
Option C:	A suitable method for long distance communication
Option D:	A numerical coded communication
Q2.	Why a sinusoidal signal is considered analog?
Option A:	It is positive for one half cycle
Option B:	It moves in both positive and negative direction
Option C:	It has infinite number of amplitudes in the range of values of the independent variable
Option D:	It is negative for one half cycle
Q3.	Noise figure measures the
Option A:	Power degradation
Option B:	SNR degradation
Option C:	Noise degradation
Option D:	None of the mentioned
Q4.	_____ is defined as the ratio of desired signal power to undesired noise power.
Option A:	Noise to signal ratio
Option B:	Signal to noise ratio
Option C:	Noise figure
Option D:	Noise temperature
Q5.	Amplitude Modulation suffers from _____
Option A:	Side-band Suppression
Option B:	Cross Modulation
Option C:	Carrier Suppression
Option D:	Intra-Pulse Modulation
Q6.	Noise figure is a parameter that represents a _____ of the system.

Option A:	Efficiency
Option B:	Maximum output
Option C:	Noisiness
Option D:	Maximum power handling capacity
Q7.	What is the line connecting the positive and negative peaks of the carrier waveform called?
Option A:	Maximum amplitude ceiling
Option B:	Envelope
Option C:	Peak line
Option D:	Modulation index
Q8.	The ratio between the modulating signal voltage and the carrier voltage is called?
Option A:	Modulation frequency
Option B:	Modulation index
Option C:	Un-modulated peak line
Option D:	Amplitude modulation
Q9.	When does over-modulation occurs
Option A:	Modulating signal voltage =0
Option B:	Modulating signal voltage > Carrier voltage
Option C:	Modulating signal voltage < Carrier voltage
Option D:	Modulating signal voltage = Carrier voltage
Q10.	Calculate the dissipation in power across 20Ω resistor for the FM signal $v(t) = 20 \cos(6600t + 10 \sin 2100t)$
Option A:	400W
Option B:	5W
Option C:	10W
Option D:	20W
Q11.	What is the percentage of modulation if the modulating signal is of 7.5V and carrier is of 9V?
Option A:	83.33
Option B:	0
Option C:	100
Option D:	91
Q12.	What is the modulation index value if $V_{\max} = 5.9\text{v}$ and $V_{\min} = 1.2\text{v}$ ?
Option A:	0.662
Option B:	0.14
Option C:	0.5
Option D:	0.425

Q13.	Indicate the false statement regarding the advantages of SSB over double sideband, full-carrier AM
Option A:	Transmitter circuits must be more stable, giving better reception.
Option B:	The signal is more noise-resistant
Option C:	More channel space is available.
Option D:	Much less power is required for the same signal strength
Q14.	Determine the Bandwidth of a FM wave when the maximum deviation allowed is 75KHz and the modulating signal has a frequency of 10KHz..
Option A:	1000 KHz
Option B:	200 KHz
Option C:	100 KHz
Option D:	170 KHz
Q15.	For 100% modulation, total power is?
Option A:	one and half times as the power of unmodulated signal
Option B:	four times as the power of unmodulated signal
Option C:	twice as the power of unmodulated signal
Option D:	same as the power of unmodulated signal
Q16.	The most commonly used filters in SSB generation are
Option A:	RC
Option B:	Mechanical
Option C:	LC
Option D:	low-pass
Q17.	What is the full form of AGC?
Option A:	Active Gain Control
Option B:	Automatic Gain Control
Option C:	Automatic Gain Conversion
Option D:	Audio Gain Control
Q18.	Selectivity measures _____
Option A:	with two signals close in frequency, the ability to select one and reject other
Option B:	the range of frequencies that receiver can select
Option C:	how well adjacent frequencies are separated in the mixer
Option D:	how well adjacent frequencies are separated by the demodulator
Q19.	Guard bands are provided in FM signal to
Option A:	To increase bandwidth
Option B:	Prevent interference from adjacent channels
Option C:	To increase the noise
Option D:	None of the above
Q20.	Sensitivity measures _____

Option A:	strongest signal that is received at the receiver
Option B:	weakest signal that is received at the receiver
Option C:	weakest frequency signal that is received at the receiver
Option D:	strongest frequency signal that is received at the receiver
Q21.	Indicate the false statement in connection with communications receivers.
Option A:	Variable sensitivity is used to eliminate selective fading
Option B:	The noise limiter cuts off the receiver's output during a noise pulse
Option C:	A product demodulator could be used for the reception of Morse code.
Option D:	Double conversion is used to improve image rejection
Q22.	Calculate the minimum sampling rate to avoid aliasing when a continuous time signal is given by $x(t) = 5 \cos 400\pi t$
Option A:	400 Hz
Option B:	250 Hz
Option C:	100 Hz
Option D:	200 Hz
Q23.	Calculate the Nyquist rate for sampling when a continuous time signal is given by $x(t) = 5 \cos 100\pi t + 10 \cos 200\pi t - 15 \cos 300\pi t$
Option A:	200Hz
Option B:	300Hz
Option C:	600Hz
Option D:	150Hz
Q24.	In pulse width modulation,
Option A:	Instantaneous power at the transmitter is constant
Option B:	Synchronization is not required between transmitter and receiver
Option C:	Amplitude of the carrier pulse is varied
Option D:	None of the above
Q25.	Which pulse modulation technique is least expensive?
Option A:	Pulse width modulation
Option B:	Pulse amplitude modulation
Option C:	Pulse code modulation
Option D:	Pulse position modulation

