Program: BE Biomedical Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code: BMC505 and Course Name: Principles of Communication Engineering

Time: 1 hour Max. Marks: 50

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

Q1.	Modulation is done in _____
Option A:	Receiver
Option B:	Transducer
Option C:	Between transmitter and radio receiver
Option D:	Transmitter
Q2.	What is Demodulation?
Option A:	Process of varying one or more properties of a periodic waveform
Option B:	Recovering information from a modulated signal
Option C:	Process of mixing a signal with a sinusoid to produce a new signal
Option D:	Involvement of noise
Q3.	Which has the same power spectral density?
Option A:	White noise
Option B:	Brown noise
Option C:	White & Brown noise
Option D:	None of the mentioned
Q4.	If the 10 Kw carrier wave is amplitude modulated at 80% depth of modulation by sinusoidal modulating signal .Calculate the side band power
Option A:	1.6 KW
Option B:	0.6KW
Option C:	0.8KW
Option D:	10KW
Q5.	The ratio between the modulating signal voltage and the carrier voltage is called
Option A:	Amplitude modulation
Option B:	Modulation frequency
Option C:	Modulation index
Option D:	Ratio of modulation
Q6.	In Amplitude modulation a modulating signal 10 sin (2πx103t) is used to modulate a carrier signal 20 sin (2πx104t) what is modulation index and B.W of the signal
Option A:	0.5 and 1KHz

Option B:	0.5 and 2KHz
Option C:	0.25 and 1KHz
Option D:	0.25 and 2KHz
Q7.	Advantage of using VSB transmission is
Option A:	Higher bandwidth than SSB
Option B:	Less power required as compared to DSBSC
Option C:	Both a and b
Option D:	None of the above
Q8.	For the best selectivity and stability the IF should be
Option A:	Low
Option B:	High
Option C:	Medium
Option D:	Infinite
Q9.	The diode detector in an AM radio receiver is usually found …….
Option A:	Before the first RF stage
Option B:	After the first RF stage
Option C:	After several stages of amplification and before the speaker
Option D:	None of the above
Q10.	In terms of signal frequency (fs) and intermediate frequency (fi), the image frequency is given by
Option A:	fs + fi
Option B:	fs + 2fi
Option C:	2fs + fi
Option D:	2(fs + fi)
Q11.	Two stations being received at the same time is known as
Option A:	Selectivity
Option B:	Sensitivity
Option C:	Fidelity
Option D:	Image frequency rejection
Q12.	VCO is used to generate
Option A:	Direct FM
Option B:	Indirect FM
Option C:	SSB-SC
Option D:	DSB-SC
Q13.	Calculate the maximum frequency deviation for the FM signal v(t) = 10 cos (6000t+ 5sin2200t)
Option A:	2200 Hz
Option B:	6000 Hz
Option C:	1750 Hz

Option D:	11000 Hz
Q14.	Phase-locked loop can be used as
Option A:	FM demodulator
Option B:	AM demodulator
Option C:	FM receiver
Option D:	AM receiver
Q15.	The process of signal compression and expansion used to reduce distortion and noise is called _____
Option A:	Amplification
Option B:	Companding
Option C:	Compressing
Option D:	Modulating
Q16.	The length of the code-word obtained by encoding quantized sample is equal to
Option A:	l=log(to the base 2)L
Option B:	l=log(to the base 10)L
Option C:	l=2log(to the base 2)L
Option D:	l=log(to the base 2)L/2
Q17.	Delta modulation uses _____ bits per sample.
Option A:	1
Option B:	2
Option C:	4
Option D:	8
Q18.	For separate channels in TDM, it is necessary to use
Option A:	Time slots
Option B:	Band pass filters
Option C:	Differentiation
Option D:	Integration
Q19.	For a given bit rate, the minimum bandwidth for ASK is _____ the minimum bandwidth for FSK.
Option A:	Less than
Option B:	Equivalent to
Option C:	Greater than
Option D:	Twice
Q20.	Optical transmission mainly uses
Option A:	WDM
Option B:	FDM
Option C:	TDM
Option D:	CDM

Q21.	A parallel tuned circuit has a resonant frequency fr = 10MHz Its Q=20 and the value of capacitor is 10pF If the ambient temp is 170C calculate the BW of parallel tuned circuit
Option A:	20MHz
Option B:	500KHz
Option C:	200MHz
Option D:	200Khz
Q22.	Data transmitted for a given amount of time is called _____
Option A:	Noise
Option B:	Power
Option C:	Frequency
Option D:	Bandwidth
Q23.	Balanced modulator can be used for the generation of
Option A:	DSBSC
Option B:	DSBFC
Option C:	SSB
Option D:	FM
Q24.	Name the Phase Locked Loop IC used for FM detector and frequency synthesizer
Option A:	IC-555
Option B:	µA741
Option C:	IC-565
Option D:	IC7404
Q25.	Indicate which of the following pulse modulation systems is analog
Option A:	PCM
Option B:	DPCM
Option C:	PWM
Option D:	DM

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Question	**Correct Option** **(Enter either 'A' or 'B' or 'C' or 'D')**
Q1.	D
Q2.	B
Q3.	A
Q4	A
Q5	C
Q6	B
Q7	C
Q8.	A
Q9.	C
Q10.	B
Q11.	D
Q12.	A
Q13.	C
Q14.	A
Q15.	B
Q16.	A
Q17.	A
Q18.	A

Q19.	A
Q20.	C
Q21.	B
Q22.	D
Q23.	A
Q24.	C
Q25.	C