Program: BE Biomedical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester V

Course Code: BMC503 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.	What do you understand by the term analog communication?
Option A:	A method in which one of the properties of a carrier signal varies in proportion to an instantaneous value of modulation signal
Option B:	A way for data and computer communication
Option C:	A numerical coded communication
Option D:	A suitable method for long distance communication
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.	An amplifier with 10dB noise figure and 4dB power gain is cascaded with a second amplifier which has a 10dB power gain what is total noise figure
Option A:	15.33dB
Option B:	11.33dB
Option C:	13.33dB
Option D:	24.33dB
Q4.	A modulating signal 10 sin (2πx103t) is used to modulate a carrier signal 20 sin (2πx104t) what is the side band frequency in amplitude modulation
Option A:	11KHz and 9KHz
Option B:	10KHz and 9KHz
Option C:	11KHz and 10KHz
Option D:	12KHz and 9KHz
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.	Calculate the depth of modulation when a transmitter radiates a signal of 9.8KW after modulation and 8KW without modulation of the signal

Option A:	80%
Option B:	67%
Option C:	50%
Option D:	100%
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.	The ability to separate the wanted signal from nearby unwanted signals is
Option A:	Selectivity
Option B:	Sensitivity
Option C:	Fidelity
Option D:	Image frequency rejection
Q12.	Theoretically bandwidth of FM system is
Option A:	Zero
Option B:	Infinite
Option C:	Can't be Determined
Option D:	2Fm
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.	Wide band FM has the characteristics:
Option A:	The frequency sensitivity k_f is large
Option B:	Bandwidth is wide
Option C:	Both a and b
Option D:	None of the above
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.	As the bit rate of an FSK signal increases, the bandwidth _____.
Option A:	Remains the same
Option B:	Decreases
Option C:	Increases
Option D:	Doubles
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.	In On- Off keying, the carrier signal is transmitted with signal value 1 and '0' indicates
Option A:	No carrier
Option B:	Half the carrier amplitude
Option C:	Amplitude of modulating signal
Option D:	None of the above

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

Q18.	C
Q19.	A
Q20.	C
Q21.	B
Q22.	D
Q23.	A
Q24.	C
Q25.	A