

University of Mumbai
Examination 2021 under cluster 7 (Lead College: SSJCOE)

Examinations Commencing from 10th April 2021 to 17th April 2021

Program: **Information Technology**

Curriculum Scheme: Rev2019

Examination: SE Semester III (DSE)

Course Code:: ITC304 and Course Name: Principle of Communication

Time: 2 hour

Max. Marks: 80

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Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Wired channels are
Option A:	Lossy
Option B:	Lossless
Option C:	Lossy and lossless
Option D:	Constant
2.	The equivalent temperature in a receiver design must be kept
Option A:	Low
Option B:	High
Option C:	Does not affect the receiver
Option D:	Medium
3.	Transmission media used for medium frequency band are
Option A:	Coaxial cable
Option B:	Copper cable
Option C:	Optical fiber
Option D:	Iron cables
4.	Ratio between modulating signal voltage and carrier voltage is called
Option A:	Amplitude modulation
Option B:	Modulation index
Option C:	Ratio of modulation
Option D:	Modulation frequency
5.	Which of the following stage is present in FM receiver but not in AM receiver
Option A:	AM amplifier
Option B:	Demodulator
Option C:	Amplitude limiter
Option D:	Mixer

6.	The Bandwidth of DSBFC AM is.....
Option A:	$2f_m$
Option B:	$4f_m$
Option C:	$3f_m$
Option D:	f_m
7.	What will be the upper and lower sideband frequencies for 5KHz amplitude modulating frequency with a 30KHz carrier frequency
Option A:	35KHz and 25KHz
Option B:	34KHz and 24KHz
Option C:	10 KHz and 35KHz
Option D:	0.35KHz and 0.25KHz
8.	Pre emphasis is done
Option A:	For removing carrier at the receiver
Option B:	For boosting of modulating signal
Option C:	Reduce power consumption
Option D:	Before detection at receiver
9.	10 cm is the wavelength corresponding to the spectrum of
Option A:	Infrared rays
Option B:	Ultraviolet rays
Option C:	Microwaves
Option D:	X-rays
10.	The _____ of an AM signal resembles the shape of baseband signal.
Option A:	Upperband
Option B:	Lowerband
Option C:	Efficiency
Option D:	Envelope
11.	What is the bandwidth of a signal having 928Mhz and 902Mhz as its upper and lower frequencies?
Option A:	26Mhz
Option B:	26Hz
Option C:	1830Hz
Option D:	1830Mhz
12.	Which one of the following noise becomes of great importance at high frequencies?
Option A:	flicker noise
Option B:	shot noise
Option C:	impulse noise
Option D:	transit-time noise
13.	Less Bandwidth is required in
Option A:	Digital Communication
Option B:	Analog Communication

Option C:	Delta Modulation
Option D:	Pulse Code Modulation
14.	In low level Amplitude Modulation
Option A:	Modulation is done at high power of carrier and modulating signal
Option B:	Output power is high
Option C:	Collector Modulation Method in AM is low level
Option D:	Output power is low
15.	Demodulation takes place
Option A:	Transmitter
Option B:	Encoder
Option C:	Channel
Option D:	Receiver
16.	Frequency Modulation is
Option A:	Change in amplitude of carrier according to modulating signal amplitude
Option B:	Change in frequency of carrier according to modulating signal amplitude
Option C:	Change in amplitude of carrier according to modulating signal frequency
Option D:	Change in amplitude of modulating signal according to carrier signal amplitude
17.	For Television and LAN for computer uses cable
Option A:	Microwave
Option B:	Waveguides
Option C:	Coaxial
Option D:	Satellite
18.	What is the advantage of superheterodyneReceiver
Option A:	High selectivity and sensitivity
Option B:	Low Bandwidth
Option C:	Low fidelity
Option D:	Low selectivity and sensitivity
19.	The noise due to random behaviour of charge carriers is
Option A:	Shot noise
Option B:	Partition noise
Option C:	Industrial noise
Option D:	Flicker noise
20.	Noise is added to a signal in a communication system
Option A:	At the receiving end
Option B:	At transmitting antenna
Option C:	In the channel
Option D:	During regeneration of the information

Q2. (20 Marks Each)	Solve any Two Questions out of Three 10 marks each
A	What is the disadvantage of Tuned RF Receivers? Draw and explain Superhetrodyne receiver with waveforms.
B	What are the different types of noise? Classify and explain noise that affect communication.
C	Explain Phase Shift Method of SSB generation

Q3. (20 Marks Each)	Solve any Two Questions out of Three 10 marks each
A	Give the various methods of FM generation. Draw and explain Armstrong method FM generation
B	Define Noise Figure and Noise Factor. Derive the expression for Friss Transmission Formula
C	<p>A sinusoidal carrier has an amplitude of 20V and frequency 200KHz .It is amplitude modulated of amplitude 6V and frequency 1KHz.Modulated voltage is developed across 80 ohm resistance.</p> <ol style="list-style-type: none"> 1. Write the equation of modulated wave 2. Determine modulation index 3. Draw the spectrum of modulated wave 4. Calculate total average power

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Question Number	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	A
Q3.	B
Q4	B
Q5	C
Q6	A
Q7	A
Q8.	B
Q9.	C
Q10.	D
Q11.	A
Q12.	D
Q13.	B
Q14.	D
Q15.	D
Q16.	B
Q17.	C
Q18.	A
Q19.	A
Q20.	C