# Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021

Course Name - -Communication System Course Code - GEEC201

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Answer all the questions. Each question carry one mark.

9. 1.Demodulation of DSB-SC signal requires

- an envelope detector
- ) an integrator
- a synchronous detector
- 🔵 a discriminator

#### 10. 2.In TV telecast, the sound signal is modulated in

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11. 3.Regenerative repeaters can be used in

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- analog communication system only
- digital communication system only
- analog and digital communication systems
- none of these
- 12. 4.The bit rate of a digital communication system is 34 Mbps. The modulation scheme is QPSK, the bout rate of the system is

- 68 Mbps
- 34 Mbps
- 17 Mbps
- 85 Mbps

13. 5.The anti-aliasing is basically a

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- Band pass filter used for band limiting
- low pass filter used as band limiting filter
- High pass filter used as band limiting filter
- none of these
- 14. 6.The signal to quantization noise ratio in n bit PCM system

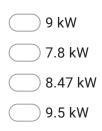
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- 🔵 is independent of value n
- increase with increasing value of n
- depends upon the sampling frequency employed
- decreases with the increasing value of n
- 15. 7.Radio signals are made up of

- voltage and current
- electrons and protons
- electric and magnetic field
- none of these

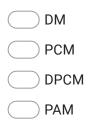
16. 8.A special AM broadcasting transmitter radiates 10 kW when the depth of modulation is 60%. The carrier power required is

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17. 9.In digital transmission, the modulation technique that requires minimum bandwidth is

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18. 10.Thermal noise is also called as

- johnson noise
- avalanche noise
- 🔵 shot noise
- 🔵 flicker noise

19. 11. The spectrum of a signal extends from 200 Hz to 3200 Hz. This signal is

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🔵 a low pass signal

🔵 a high pass signal

🔵 a band pass signal

- 🔵 a band stop signal
- 20. 12.The sampling process converts

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- continuous time signal into continuous time signal
- continuous time signal into a discrete time signal
- discrete time signal into a continuous time signal
- \_\_\_\_ discrete time signal into discrete time signal
- 21. 13.Which multiplexing technique transmits digital signal?

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**FDM** 

- TDM
- WDM
- FDM and TDM

22. 14.If the deviation is 75 kHz and maximum modulating frequency is 5 kHz, what is the bandwidth of an FM wave?

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- 80 kHz
   160 kHz
- \_\_\_\_\_ 40 kHz
- 🔵 320 kHz
- 23. 15.Which of the following is not a major communication medium?

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$\square$	free	space

\_\_\_\_\_ water

\_\_\_\_\_ wires

- fiber optic cable
- 24. 16.One of the serious disadvantages of FM transmission is its

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limited line of sight range

expensive equipment

adjacent channel interference

25. 17. The broadcasting frequency range used in frequency modulator is

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30 MHz to 300 MHz

- 88 MHz to 108 MHz
- 3 MHz to 30 MHz
- 1 MHz to 3 MHz
- 26. 18. The length of the antenna to transmit a signal must be at least

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- 1/3 wavelength
  1/4 wavelength
  2/3 wavelength
- 2/4 wavelength
- 27. 19. Which of the following modulation is analog in nature

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PCM
DPCM
DM
none of these

28. 20. In frequency modulation

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- ( ) the frequency of the carrier remains constant
- \_\_\_\_\_ the amplitude of carrier remains constant
- the amplitude of the carrier wave is varied
- the frequency of the signal is made equal to the carrier frequency
- 29. 21.Armstrong F. M. transmitter performs frequency multiplication in stages

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- to increase the overall S/N ratio
- \_\_\_\_\_ to reduce bandwidth
- to find the desired value of carrier frequency as well as frequency deviation
- for convenience
- 30. 22. Major advantage of Armstrong modulator is that

- it is capable to producing WBFM signals
- the centre frequency (carrier frequency when unmodulated) is extremely stable
- a large depth of modulation can be achieved
- none of these

31. 23.In phase modulation, the frequency deviation is

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- independent of the modulating signal frequency
- increasingly proportional to the modulating signal frequency
- directly proportional to the modulating signal frequency
- inversely proportional to the square root of the modulating frequency
- 32. 24.The positive RF peaks of an AM voltage rise to a maximum value of 12 volt and drop to a minimum value of 4v. The modulation index assuming single tone modulation is

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- 3
  44256
  44287
  44228
- 33. 25.For which of the following systems, the signal to noise ratio is the highest?

- PAM PWM
- PAM and PWM

34. 26.What are the three steps in generating PCM in the correct sequence?

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- sampling, quantizing & encoding
- encoding, sampling & quantizing
- sampling, encoding & quantizing
- \_\_\_\_ quantizing, sampling & encoding
- 35. 27.In a certain system, the signal power is 13 dB and noise power is -1 dB. The SNR will be

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- 14 dB
   -13 dB
   12dB
   13 dB
- 36. 28.A narrowband noise shows

- amplitude modulation only
- frequency modulation only
- both AM and FM
- none of these

37. 29. Which of the following is not the modulation type for modem specifications?

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VSB PSK FSK

38. 30.Thermal noise is independent of

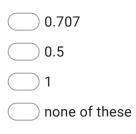
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- bandwidth
  temperature
  center frequency
- Boltzmann constant
- 39. 31. Which of the following modulated signals can be detected by an envelop detector?

- DSB-SC
- DSB-FC
- **FM**
- SSB-SC

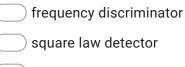
40. 32. A carrier is simultaneously modulated by two sine waves with modulation indices of 0.3 and 0.4; the total modulation index is

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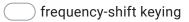


41. 33. FM signal can be converted into AM signal using

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- slope detector
- none of these
- 42. 34.The most common modulation system used for telegraphy is



- two-tone modulation
- \_\_\_\_ pulse-code modulation
- single-tone modulation

43. 35.What is the ratio of modulating power to total power at 100 percent modulation?

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0.04375

- 0.043056
- 0.085417
- none of these
- 44. 36.Ring modulator is generally used for

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- generating SSB-SC signal
- generating DSB-FC signal
- generating DSB-SC signal
- none of these
- 45. 37.Vestigial sideband modulation is normally used for



- monoaural broadcasting
- TV broadcasting
- 🔵 stereo broadcasting

46. 38.Thermal noise power is proportional to

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47. 39.Number of sidebands in FM signal

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$\square$	) 2
$\square$	) 1
$\square$	) zero
$\square$	) none of these

48. 40.Which of the following is considered as an AM signal?

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BPSK
 DPSK

Differential encoded PSK

QPSK

49. 41.A carrier of 100 W is amplitude modulated to the depth of 40%. The total transmitted power is

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116 W
 112 W

- \_\_\_\_ 108 W
- \_\_\_\_\_ 118 W
- 50. 42.Shot noise is produced by

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$\bigcirc$	Electrons
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- Photons
- Electrons & Photons
- none of these
- 51. <u>43.AM</u> broadcast station transmits modulating frequency upto 6KHz. If transmitting frequency is 810KHz, then maximum and lower sidebands are

- 816KHz and 804KHz
- 826KHz and 804KHz
- 916KHz and 904KHz
- 822KHz and 816KHz

#### 52. 44.Data transmitted for a given amount of time is called

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Noise

- Power
- Frequency
- Bandwidth
- 53. 45.Why a sinusoidal signal is considered analog?

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- It moves in both positive and negative direction
- It is positive for one half cycle
- It is negative for one half cycle
- It has infinite number of amplitudes in the range of values of the independent variable

#### 54. 46.What is Demodulation?

- Process of varying one or more properties of a periodic waveform
- Recovering information from modulated signal
- Process of mixing a signal with a sinusoid to produce a new signal
- Involvement of noise

55. 47.Medium which sends information from source to receiver is called

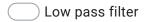
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Transmitter

- Transducer
- \_\_\_\_\_ Loudspeaker
- Channel
- 56. 48.Cell phones sent information in form of

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- microwaves
- electrical signals
- infrared waves
- 🔵 radio waves
- 57. 49.Which device is used for tuning the receiver according to incoming signal (especially in TV)?



- High pass filter
- Zener diode
- 🕖 Varacter diode

#### 58. 50.Square Law modulators are

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- used for frequency modulation
- used for pulse width modulation
- used for amplitude modulation
- used for phase modulation
- 59. 51.The threshold effect is more dominant in

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- AM FM PM PWM
- 60. 52.An AM wave is EAM(t)=(1+0.12cos1014+0.05cos103t)cos106t. The resultant modulation index is \_\_\_\_\_\_.

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0.4

- 0.3
- 0.13
- 0.14

61. 53.A narrow band FM has\_\_\_\_\_\_.

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Two sidebands

- Equal amplitude sidebands
- Both sidebands with same phase difference with the carrier
- Does not show amplitude variations
- 62. 54.Two carrier signals 40MHz are frequency modulated by 4KHz signal such that the bandwidth is same in both the cases. The peak deviation is in the ratio of

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- 0.044444
- 0.043056
- 0.042361
- 0.084028
- 63. 55.The Nyquist frequency(fs) and baseband signal frequency (fm) as per sampling theorem are related by

- 🔵 fs=fm
- fs=2fm
- \_\_\_\_\_ fs>2fm
- \_\_\_\_\_ fs<2fm

64. 56.In a PCM system each quantization level is encoded into 8bits.The signal-toquantization noise ratio is equal to \_\_\_\_\_\_.

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$\square$	) 48dB	
$\square$	) 64dB	

- 128dB
- 256dB

65. 57.Demodulation of PAM signal is done with \_\_\_\_\_\_.

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- LPF
- HPF
- BPF
- Schmitt Trigger

66. 58.Unlike AM, the biggest advantages of PCM is\_\_\_\_\_\_.

- Larger noise
- \_\_\_\_ Larger bandwidth
- Incompatability with TDM system
- Inability to handle analog signals

67. 59.The signal-to-quantization noise ratio in PCM depends upon:

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- Message signal bandwidth
- Sampling rate
- Number of quantisation levels
- None of these
- 68. 60.In a PCM system, if the numbers of quantization levels are 16 and maximum signal frequency is 4KHz, the transmission bit rate is\_\_\_\_\_.

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- 10kbps
- \_\_\_\_ 15kbps
- \_\_\_\_ 16kbps

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