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

Course Name - - Analog and Digital Communication Course Code - PCC-EC401

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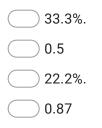
Answer all the questions. Each question carry one mark.

9. 1.Communication is the process of

- keeping in touch
- broadcasting
- exchanging information
- entertainment by electronics

10. 2. Maximum efficiency in AM is

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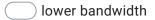
11. 3. If the noise level of the signal is increased then capacity of a band limited AWGN channel

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$\square$	) is increased
$\square$	) is decreased
$\square$	) remains constant
$\square$	) none of these

12. 4. The main advantage of PCM system is

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lower power

- lower noise
- none of these

#### 13. 5.For generation of FSK the data pattern must be given in

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RZ format

- NRZ format
- \_\_\_\_\_\_ split phase Manchester
- none of these
- 14. 6.Eye pattern is used to study

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- quantization noise
- error rate
- none of these
- 15. 7.Coherent demodulation of FSK signal can be effected using

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Correlation receiver

- BPF and envelope detector
- \_\_\_\_ matched filter
- discriminator detection

16. 8.Quantization noise occurs in

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- time division multiplexing
- frequency division multiplexing
- pulse code modulation
- pulse frequency modulation
- 17. 9.In DM granular noise occurs when the modulating signal

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- increase rapidly
  remain constant
  decrease rapidly
  none of these
- 18. 10.Inter symbol interference is problem in

- AM transmission
- FM transmission
- PCM transmission
- PM transmission

#### 19. 11. PLL can be used to demodulate

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PAM Signal

- PCM Signal
- 🕖 FM Signal
- DSB-SC Signal
- 20. 12.A modulation index of 0.5 would be same as

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- 0.5 of modulation depth
- 55 % of modulation depth
- 5% of modulation depth
- 50% of modulation depth
- 21. 13.The PAM, PWM and PPM are the types of

- analog pulse modulation
- digital pulse modulation
- analog and digital pulse modulation
- none of these

22. 14lf the sampling takes place at a rate which is lower than the Nyquist rate then

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- reconstruction of the signal is not possible
- \_\_\_\_ an error called aliasing takes place
- no effect on the reconstructed signal
- none of these
- 23. 15. The aliasing effect can be eliminated by

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- 🔵 using an antialiasing filter
- reducing the sampling frequency
- increasing the sampling frequency
- increasing the modulating frequency
- 24. 16. In PCM the biggest disadvantage compared to analog modulation is

- 🔵 large bandwidth
- 🔵 larger noise
- inability to handle analog signals
- incompatibility with TDM system

## 25. 17. Demodulation of DSB-SC signal requires

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an envelope detector

\_\_\_\_ an integrator

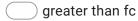
- a synchronous detector
- 🔵 a discriminator

## 26. 18.The transmitted power in an FM system is

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- dependent on the number of sidebands
- dependent on the carrier power and sidebands
- always constant
- none of these
- 27. 19. In AM, the modulating frequency should always be

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lower than fc

equal to fc

none of these

#### 28. 20. One of the serious disadvantages of FM transmission is its

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\_\_\_\_ high static noise

- limited line of sight range
- expensive equipment
- adjacent channel interference
- 29. 21. 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
- 30. 22. In QAM both identities .....are varied.

- \_\_\_\_ amplitude and phase
- frequency and phase
- 🔵 bit rate and phase
- bit rate and frequency

31. 23. When modulating frequency is doubled, the modulation index is halved and the modulating voltage remains constant. The modulation system is

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$\bigcirc$	AM
$\bigcirc$	FM
$\bigcirc$	PM
$\bigcirc$	all of these

32. 24. In digital communication system, the data transmission rate is specified in

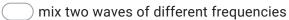
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$\square$	MHz
$\square$	GHz
$\square$	) bytes/second
$\square$	) bauds

33. 25. Modulation is primarily accomplished to-

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\_\_\_\_ produce side-bands



- Transmit-audio frequency signals over long distances
- improve transmission efficiency

34. 26.Limitations of AM modulation is/are-

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noisy reception

- poor audio quality
- low transmission efficiency and small operating range

all of these

35. 27. Balanced modulators are used to

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- produce suppressed carrier signal
- produce SSB signal
- produced PCM signal
- none of these
- 36. 28. The bandwidth requirement of AM wave is

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2fm where fm is the highest modulating frequency

) 2fm

- 2nfm where n is number of significant side-bands
- \_\_\_\_\_ fc + fm where fc is the carrier frequency

#### 37. 29.A balanced modulator circuit is used to reject

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$\square$	carrier
$\square$	LSB
$\square$	USB
$\square$	LSB and USB

38. 30.VSB modulation as compared to SSB modulation, occupies

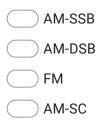
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- \_\_\_\_ more bandwidth
- less bandwidth
- 🔵 same bandwidth
- signal-dependent bandwidth
- 39. 31.The ring modulator is generally used for

- generating SSB-SC signal
- generating ISI signal
- \_\_\_\_\_ generating wideband signal
- generating DSB-SC signal

40. 32. Which one of the following modulation techniques has got maximum SNR?

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41. 33.Which one of the following is an indirect way of generating FM?

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- reactance FET modulator
- varactor diode modulator
- \_\_\_\_ armstrong modulator
- reactance tube modulator
- 42. 34. 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

43. 35. In the generation of modulated signal, a varactor diode can be used

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FM generation only

- AM generation only
- PM generation only
- both AM & PM generation
- 44. 36.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.
- 45. 37. ASK is a result of combination of shift keying

- analog modulation
- \_\_\_\_\_ amplitude modulation
- digital modulation
- none of these

#### 46. 38.The de-emphasis filter in an FM receiver comes

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before FM demodulator

\_\_\_\_\_ after FM demodulator and before base band filter

🔵 after base band filter

- before RF amplifier
- 47. 39. The most common detector used in an AM radio broadcast receiver is

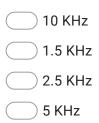
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- \_\_\_\_\_ envelope detector
- coherent detector
- \_\_\_\_ discriminator
- \_\_\_\_\_ ratio detector
- 48. 40.The most noise immune system is

- SSB
- **PDM**

49. 41. Maximum frequency present in a signal is 2.5 kHz. Then Nyquist rate is

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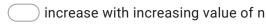
50. 42.What are the three steps in generating PCM in the correct sequence?

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- sampling, quantizing & encoding
- encoding, sampling & quantizing
- sampling, encoding & quantizing
- \_\_\_\_ quantizing, sampling & encoding
- 51. 43. The signal to quantization noise ratio in an n-bit PCM system

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- depends upon the sampling frequency employed
- is independent of the value of n



decreases with increasing value of n

52. 44.The signal to quantization noise ratio in a PCM system depends on

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🔵 sampling rate

- number of quantization level
- message signal bandwidth
- \_\_\_\_ none of these
- 53. 45.One disadvantage of adaptive delta modulation over linear delta modulation is that it

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- \_\_\_\_\_ requires more bandwidth
- is more vulnerable to channel errors
- requires a larger number of comparators in the encoder
- is not suitable for signals with periodic component
- 54. 46. MSK (Minimum Shift Keying) is an orthogonal FSK scheme that gets its name from the fact that

- the phase shift is minimum
- \_\_\_\_\_ the error probability is minimum
- the transmission power required is minimum
  - the transmission bandwidth required is minimum

55. 47.In case of data transmission, which one of the following systems will give the maximum probability error?

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ASK FSK PSK DPSK

56. 48. The number of frequencies produced at the output of binary FSK modulator is

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$\subseteq$	
$\square$	) infinite
$\square$	three
	) power of two

57. 49. Which one of the following circuits transmits two messages simultaneously in one direction

- duplex
- \_\_\_\_ diplex
- simplex
- \_\_\_\_ quadruplex

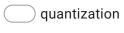
58. 50.Which one of the following multiplexing technique involves signal composed of light beams?

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CDM TDM FDM

59. 51. The process of converting the analog samples into discrete form is called

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- \_\_\_\_ modulation
- \_\_\_\_ multiplexing
- sampling
- 60. 52. The technique that may be used to reduce to side band power is

- BPSK
- GMSK
- MSK
- BFSK

61. 53.In communication system noise is most likely to affect the signal

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🔵 at transmitter

- in channel
- in information source
- \_\_\_\_\_ at destination
- 62. 54. The threshold effect is more dominant in

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- FM AM PCM PM
- 63. 55.In TV telecast, the sound signal is modulated in

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64. 56. 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
- 65. 57.The spectral density of white noise is

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- exponential
- uniform
- Poisson
- 🔵 Gaussian
- 66. 58. Companding is used

- to overcome quantized noise in PCM
- to protect small signals in PCM from quantizing distortion
- to overcome impulse noise
- none of these

67. 59.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
- 68. 60. Voice frequency bandwidth of telephone system is approximately

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- 100 Hz
- 300 KHz
- \_\_\_\_\_ 400 Hz
- 200 Hz
- 69. 61. The most common modulation system used for telegraphy is

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frequency-shift keying

- \_\_\_\_ pulse-code modulation
- single-tone modulation
- none of these

70. 62. The quantization error can be improved by

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increasing steps size

- \_\_\_\_\_ reducing steps size
- keeping equal steps size
- \_\_\_\_ none of these
- 71. 63. 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
- 72. 64. A pre-emphasis circuit provides extra noise immunity by

- boosting the base frequencies
- amplifying the higher audio frequencies
- pre-amplifying the whole audio band
- converting the phase modulation to FM

73. 65. Encoder

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assigns quantized values

Changes quantized values to binary values

Changes quantized values to numerical values

- changes numerical values to binary values
- 74. 66. Zero crossing detectors are used to detect

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- SSB-SC DSB-SC FM
- 75. 67. Which of the following analog modulation scheme requires the minimum transmitted power and minimum channel bandwidth?



#### 76. 68. In phase modulation, phase deviation is proportional to

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🔵 carrier amplitude

- carrier phase
- \_\_\_\_ message signal
- message signal frequencies

#### 77. 69. Fading is

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- Change in polarization only at receiver end
- Change in frequency only at receiver end
- fluctuation in signal strength at receiver end
- C change in phase only at receiver end
- 78. 70. In communication systems, noise due to quantization error is

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- linear and signal dependent
- nonlinear and signal dependent
- linear and signal independent at low frequencies only
- nonlinear and signal dependent at low frequencies only

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