

# 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

*Mark only one oval.*

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

10. 2. Maximum efficiency in AM is

*Mark only one oval.*

33.3%.

0.5

22.2%.

0.87

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

*Mark only one oval.*

is increased

is decreased

remains constant

none of these

12. 4. The main advantage of PCM system is

*Mark only one oval.*

lower bandwidth

lower power

lower noise

none of these

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

*Mark only one oval.*

- RZ format
- NRZ format
- split phase Manchester
- none of these

14. 6.Eye pattern is used to study

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- ISI
- quantization noise
- error rate
- none of these

15. 7.Coherent demodulation of FSK signal can be effected using

*Mark only one oval.*

- correlation receiver
- BPF and envelope detector
- matched filter
- discriminator detection

16. 8.Quantization noise occurs in

*Mark only one oval.*

- time division multiplexing
- frequency division multiplexing
- pulse code modulation
- pulse frequency modulation

17. 9.In DM granular noise occurs when the modulating signal

*Mark only one oval.*

- increase rapidly
- remain constant
- decrease rapidly
- none of these

18. 10.Inter symbol interference is problem in

*Mark only one oval.*

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

19. 11. PLL can be used to demodulate

*Mark only one oval.*

- PAM Signal
- PCM Signal
- FM Signal
- DSB-SC Signal

20. 12.A modulation index of 0.5 would be same as

*Mark only one oval.*

- 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

*Mark only one oval.*

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



22. 14. If 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

*Mark only one oval.*

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

25. 17. Demodulation of DSB-SC signal requires

*Mark only one oval.*

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

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

*Mark only one oval.*

- 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

*Mark only one oval.*

- greater than  $f_c$
- lower than  $f_c$
- equal to  $f_c$
- none of these

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

*Mark only one oval.*

- 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.

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- 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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- AM
- FM
- PM
- all of these

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

*Mark only one oval.*

- MHz
- GHz
- bytes/second
- bauds

33. 25. Modulation is primarily accomplished to-

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- produce side-bands
- mix two waves of different frequencies
- 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

*Mark only one oval.*

- 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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- $2f_m$  where  $f_m$  is the highest modulating frequency
- $2f_m$
- $2nf_m$  where  $n$  is number of significant side-bands
- $f_c + f_m$  where  $f_c$  is the carrier frequency

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

*Mark only one oval.*

- carrier
- LSB
- USB
- LSB and USB

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

*Mark only one oval.*

- more bandwidth
- less bandwidth
- same bandwidth
- signal-dependent bandwidth

39. 31.The ring modulator is generally used for

*Mark only one oval.*

- 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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- AM-SSB
- AM-DSB
- FM
- AM-SC

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

*Mark only one oval.*

- reactance FET modulator
- varactor diode modulator
- armstrong modulator
- reactance tube modulator

42. 34. Major advantage of Armstrong modulator is that

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- 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

*Mark only one oval.*

- FM generation only
- AM generation only
- PM generation only
- both AM & PM generation

44. 36. In phase modulation, the frequency deviation is

*Mark only one oval.*

- 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

*Mark only one oval.*

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



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

*Mark only one oval.*

- 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

*Mark only one oval.*

- envelope detector
- coherent detector
- discriminator
- ratio detector

48. 40.The most noise immune system is

*Mark only one oval.*

- SSB
- PCM
- PDM
- PWM

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

*Mark only one oval.*

- 10 KHz
- 1.5 KHz
- 2.5 KHz
- 5 KHz

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

*Mark only one oval.*

- depends upon the sampling frequency employed
- is independent of the value of n
- increase with increasing value of n
- decreases with increasing value of n

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

*Mark only one oval.*

- 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

*Mark only one oval.*

- 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

*Mark only one oval.*

- 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?

*Mark only one oval.*

- ASK  
 FSK  
 PSK  
 DPSK

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

*Mark only one oval.*

- two  
 infinite  
 three  
 power of two

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

*Mark only one oval.*

- duplex  
 diplex  
 simplex  
 quadruplex

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

*Mark only one oval.*

- CDM
- TDM
- FDM
- WDM

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

*Mark only one oval.*

- quantization
- modulation
- multiplexing
- sampling

60. 52. The technique that may be used to reduce to side band power is

*Mark only one oval.*

- BPSK
- GMSK
- MSK
- BFSK

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

*Mark only one oval.*

- at transmitter
- in channel
- in information source
- at destination

62. 54. The threshold effect is more dominant in

*Mark only one oval.*

- FM
- AM
- PCM
- PM

63. 55. In TV telecast, the sound signal is modulated in

*Mark only one oval.*

- VSB
- SSB
- FM
- AM

64. 56. Regenerative repeaters can be used in

*Mark only one oval.*

- 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

*Mark only one oval.*

- exponential
- uniform
- Poisson
- Gaussian

66. 58. Companding is used

*Mark only one oval.*

- 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

*Mark only one oval.*

- 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

*Mark only one oval.*

- 100 Hz
- 300 KHz
- 400 Hz
- 200 Hz

69. 61. The most common modulation system used for telegraphy is

*Mark only one oval.*

- frequency-shift keying
- pulse-code modulation
- single-tone modulation
- none of these



70. 62. The quantization error can be improved by

*Mark only one oval.*

- 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

*Mark only one oval.*

- 1/3 wavelength
- 1/4 wavelength
- 2/3 wavelength
- 2/4 wavelength

72. 64. A pre-emphasis circuit provides extra noise immunity by

*Mark only one oval.*

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

73. 65. Encoder

*Mark only one oval.*

- 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

*Mark only one oval.*

- SSB-SC
- DSB-SC
- FM
- AM

75. 67. Which of the following analog modulation scheme requires the minimum transmitted power and minimum channel bandwidth?

*Mark only one oval.*

- VSB
- DSB-SC
- SSB
- AM

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

*Mark only one oval.*

- carrier amplitude
- carrier phase
- message signal
- message signal frequencies

77. 69. Fading is

*Mark only one oval.*

- change in polarization only at receiver end
- change in frequency only at receiver end
- fluctuation in signal strength at receiver end
- 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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