

# Analog communication ELE 280

Sheet 0



1. Explain the basic components of an analog communication system.
2. Mention the difference between analog and digital signals.
3. What are the different impairments in the communication channel that affects the transmitted signal?

## Multiple Choice Questions (MCQs)

1. Which of the following is an example of a digital signal?

- a) AM radio signal
- b) FM radio signal
- c) Morse-coded telegraph message
- d) Analog TV signal

2. Which of the following is not a component of an analog communication system?

- a) Modulator
- b) Input transducer
- c) Channel
- d) Compressor

3. Which transmission system allows communication in both directions simultaneously?

- a) Simplex
- b) Half-Duplex
- c) Full-Duplex
- d) Parallel transmission

4. Which of the following is an example of analog communication?

- a) FM radio
- b) Wi-Fi
- c) 5G cellular networks
- d) Bluetooth

5. What happens to a signal as it travels through a medium in terms of attenuation?

- a) Its strength increases
- b) Its frequency decreases
- c) Its strength decreases
- d) It becomes more reliable

6. What is the main purpose of modulation in an analog communication system?

- a) To compress the signal for transmission
- b) To convert the baseband signal into a higher frequency for efficient transmission
- c) To demodulate the signal at the receiver
- d) To remove noise from the signal

7. Which of the following devices converts an electrical signal back to its original physical form in an analog communication system?

- a) Transmitter
- b) Input transducer
- c) Output transducer
- d) Modulator

8. Which communication channel is most prone to interference?

- a) Optical fiber
- b) Coaxial cable
- c) Wireless radio waves
- d) Twisted pair cable

9. The bandwidth of a communication system is defined as the:

- a) Range of frequencies it can transmit without loss of energy
- b) Maximum power of the transmitted signal
- c) Total distance a signal can travel
- d) Ratio of signal power to noise power

10. What is the main purpose of an antenna in a communication system?

- a) To increase the signal strength
- b) To convert electrical signals into electromagnetic waves for transmission
- c) To remove noise from the signal
- d) To modulate the carrier wave

11. Which of the following is a disadvantage of analog signals compared to digital signals?

- a) Better suited for video transmission
- b) Less susceptible to noise
- c) Limited ability to be encrypted
- d) Consume less bandwidth

12. Which type of signal modulation is typically used in FM radio broadcasting?

- a) Amplitude Modulation (AM)
- b) Frequency Modulation (FM)
- c) Pulse Code Modulation (PCM)
- d) Phase Modulation (PM)

13. Which of the following is an example of an unguided transmission medium?

- a) Coaxial cable
- b) Fiber optic cable
- c) Microwave
- d) Twisted pair

14. Which of the following is an example of a guided transmission medium?

- a) Satellite
- b) Optical fiber
- c) Radio waves
- d) Infrared

15. In analog communication, what is a carrier wave?

- a) The baseband signal before modulation
- b) The electromagnetic wave that carries the modulated signal
- c) The wave that generates noise in the system
- d) The low-frequency signal used for data transfer

16. Which of the following impairments is specifically caused by the physical properties of the channel?

- a) Attenuation
- b) Jamming
- c) Thermal noise
- d) Interference

17. What is the typical frequency range for AM radio broadcasting?

- a) 88 MHz to 108 MHz
- b) 2 GHz to 5 GHz
- c) 535 kHz to 1605 kHz
- d) 3 kHz to 30 kHz

18. What is the typical frequency range for FM radio broadcasting?

- a) 88 MHz to 108 MHz
- b) 2 GHz to 5 GHz
- c) 535 kHz to 1605 kHz
- d) 3 kHz to 30 kHz

19. Which of the following best defines a baseband signal?

- a) A signal that has been modulated for transmission
- b) A high-frequency signal ready for broadcasting
- c) An unmodulated signal generated by the input transducer
- d) A signal that carries the information after demodulation

20. Which term refers to the ability of a communication system to transmit data in both directions but not simultaneously?

- a) Full-Duplex
- b) Half-Duplex
- c) Simplex
- d) Multiplex

21. Which of the following technologies is an example of wireless communication?

- a) Fiber optic cable
- b) Bluetooth
- c) Twisted pair cable
- d) Coaxial cable

22. What is the role of the demodulator in an analog communication system?

- a) To modulate the signal for transmission
- b) To amplify the received signal
- c) To extract the baseband signal from the carrier wave
- d) To remove noise from the transmitted signal

23. In which of the following communication systems is simplex transmission typically used?

- a) Telephone system
- b) Internet communication system
- c) Telegraph
- d) Satellite communication system

24. Which of the following factors affects the quality of information transmission in a communication system?

- a) Signal power and channel bandwidth
- b) Modulation technique and receiver sensitivity
- c) Signal attenuation and carrier frequency
- d) Transmission medium and frequency range