Course B.E-EEE(Marine)

Batch 8

Semester V

Subject Code UAEE511

Subject Name Communication Engineering

Part-A

Unit-1

1 Define Modulation.

2 Define Amplitude Modulation.

3 Define Modulation index.

4 What is the need for modulation?

5 Define signal.

6 Define frequency modulation.

7 What is super heterodyne receiver?

8 State the advantages of FM over AM.

9 Define Low level Modulation.

10 Define High level Modulation.

11 Distinguish between low level and high level modulation.

12 What are the advantages of the super heterodyne receiver?

13 What are the advantages of single sideband transmission?

14 Define Critical Modulation.

15 Define Over Modulation.

16 Define Under Modulation.

17 List the elements of a communication system.

18 What are the various classification of modulation?

19 What is power distrubutioin in Amplitude modulation?

20 Define Demodulation.

Unit-2

1 Define Transmission Medium in communication System?

2 What is waveguide?

3 What are the types of Transmission Mediums?

4 What in meant by space wave propagation?

5 What are the types of waves in Radio propagation?

6 Define Path Loss.

7 Define Ground Wave.

8 Define Surface Wave.

9 Define Sky Wave.

10 Define Space Wave.

11 What is meant by Radio Propagation?

12 What is Critical Frequency?

13 Define Bandwidth.

14 What are the types of losses in transmisstion lines?

15 Define Standing Wave.

16 Define White Gaussian Noise

17 Define horomonics.

18 Define Baseband.

19 Define Line of Sight.

20 What is Interference?

Unit-3

1 Define Digital modulation.

2 What is meant by Bit Error Rate?

3 Define Sampling.

4 Define pulse code modulation.

5 Define Angle modulation.

6 What are the types of pulse modulation?

7 Define Quantization.

8 What is meant by Sampling Rate?

9 What is the Advantages of PCM?

10 Define Quantization Noise.

11 What is Delta Modulation?

12 What is differential pulse code modulation?

13 Define FSK.

14 Define PSK.

15 What is aliasing?

16 Define quadrature sampling.

17 Define Multiplexing.

18 What is Time division multiplexing?

19 What is frequency division multiplexing?

20 Define attenuation.

Unit-4

1 Define Data communication.

2 Define Noise.

3 Define Full duplex.

4 Define Half duplex.

5 What are the various classification of Modems?

6 What is Asynchronous Transmission?

7 What is Synchronous Transmission?

8 Define QAM.

9 How the modems are classified based on speed?

10 Define WAN.

11 What is meant by Crosstalk?

12 What is meant by Distortion?

13 Define data modem

14 Define Polling.

15 Define Error control.

16 What is meant by Serial transmission?

17 What is meant by parallel transmission?

18 Define ISDN.

19 Define LAN.

20 List various layers in ISO-OSI model

Unit-5

1 Define Satellite communication

2 What are the components of a satellite?

3 List the types of orbits in satellite communication.

4 State Kepler's law.

5 Define Fibre loss.

6 Define Geostationary Orbit.

7 What is polar satellite?

8 List the application of Satellite communication.

9 List the various types of satellites.

10 Define Azimuth.

11 What is limit of visibility?

12 Define elevation angle.

13 Define fibre Optics

14 Define Optical communication

15 State the advantages of optical communication.

16 Define Core and cladding in fiber optics.

17 Define the various optical Sources and detectors?

18 What is the advantage of LASER over LED?

19 Define various losses available in fibre optic communication.

20 Differentiate step index and graded index.

Part-B

Unit-1

1 Differentiate amplitude modulation and frequency modulation.

2 Draw the block diagram of Superhetrodyne Receiver.

3 Draw the block diagram of Tuned radio frequency receiver.

4 Derive the equation for the spectrum of FM signal.

5 With the help of wave diagram differentiate AM,FM and PM signal.

6 Differentiate between Frequency Modulation and Phase Modulation.

7 Develop an expression for a narrow band FM wave.

8 State the drawbacks of DM and suggest a method to overcome it.

9 Describe the relationship between FM and PM.

10 With the help of neat diagram explain FM receiver.

11 Explain the method of generating a single sideband signal using balance modulators

12 Write short notes on Image frequency.

13 List the merits of superhetrodyne receiver compared to radio tuned receiver.

14 List out the advantages and disadvantages of amplitude modulation double side band full carrier.

15 Derive the amplitude modulation output with voltage equation.

Unit-2

1 Compare Reflection and Refraction.

2 Write short notes on Path loss of radio propagation wave.

3 Explain the surface wave propagation of electromagnetic waves.

4 Write short notes on standing waves.

5 Define and derive the expression for free space path loss.

6 List various frequency ranges of electromagnetic spectrum.

7 Write short notes on Fresnel Zones.

8 Write short notes on Nodes and Antinodes.

9 List the advantages of coaxial line over twisted cables.

10 what are the various types of losses occuring in transmission lines ?Briefly explain them?

11 Briefly explain about the effects of electric and magnetic field over standing waves

12 Write short notes on types of transmission cables.

13 Write short notes on Coaxial lines.

14 Briefly explain about the characteristric impedance of a transmission line.

15 Write short notes on Radio wave propagation.

Unit-3

1 Write short notes on Pulse amplitude Modulation.

2 Discuss the generation method of PWM.

3 List the most common methods of pulse modulation.

4 Briefly explain Frequency shift keying method with equations.

5 Compare between DPCM and Pulse code modulation.

6 Briefly explain about Quadrature amplitude modulation.

7 Write short notes on various Quantizing process.

8 Write short notes on Signal to Quantization noise radio.

9 List the advantages of PCM.

10 Briefly explain about types of pulse modulation.

11 Write short notes on amplitude shift keying.

12 Write short notes on phase shift keying.

13 Briefly explain about DPCM.

14 Explain about the Quantization noises during pulsecode modulation

15 Write short notes on Companding in pulse code modulation

Unit-4

1 List the error controls schemes used in Modems.

2 Compare RS-449,RS-422 and RS-423.

3 Write short notes on serial and parallel communication.

4 Write a brief account on ISDN Network.

5 Write short notes on LAN Network.

6 Discuss the Bandwidth-SNR trade off of a communication system.

7 Briefly explain the role of modem in communication network.

8 Write short notes on Session layer in ISO-OSI Model.

9 Compare the performance of CDMA with FDMA and TDMA

10 Write short notes on Transport layer in ISO-OSI Model.

11 Write short notes on Application layer in ISO-OSI Model.

12 Compare Synchronous and Asynchronous transmission in data communication.

13 Write short notes on speed of Modem.

14 Write short notes on error control in digital communication.

15 Write short notes on telephone network.

Unit-5

1 Compare the three types of optical fiber configurations.

2 Illustrate Kepler's laws in satellite communication .

3 Explain in detail about geostationary Satellites.

4 Illustrate the significance of satellite link budgets.

5 Briefly describe the losses occuring in fibre optic communication systems

6 Draw the block diagram of a satellite uplink model

7 Briefly discuss about uplink and downlink frequency range for satellite communication.

8 List the advantages of using optical fibre as a medium of communication in a telephone network.

9 Classify the satellite orbital patterns.

10 Explain briefly about classification of optical fibre.

11 Write short notes on modes of operation of optical fibre.

12 Explain the characteristrics sources and detectors used in optical communication.

13 List the advantages and disadvantages of geosynchronous orbits.

14 Draw the block diagram of optical fiber communication link.

15 Give the advantages of fiber optic system.

Part-C

Unit-1

1 Demonstrate with neat diagram about the operation of a super heterodyne receiver

2 Explain the working of a SSB transmitter and receiver.

3 Explain in detail about Amplitude Modulation Transmitter and Receiver.

4 Describe the working of direct and indirect method of generation of FM signal

5 Solve the expression for the amplitude modulated wave and its power relation and give the time and frequency domain representation of AM wave.

6 Demonstrate with neat diagram about the operation of a Tunal Radio frequency receiver.

Unit-2

1 Draw and explain in detail about radio wave propagation.

2 Explain in detail about the factors influencing the radio wave propagation.

3 Explain in detail about various transmission mediums available in communication system?

4 Explain in detail about reflection,refraction,interference and diffraction in optical communication?

5 Explain in detail about various transmission systems & their application.

6 Explain in detail about various losses in transmission lines.

Unit-3

1 Describe the working of pulse code modulation system with its block diagram

2 Discuss various multiple access techniques used in wireless communication with their merits and demerits.

3 With neat diagram explain about PAM Modulation and demodulation.

4 With neat diagram explain about frequency division multiple access technique.Discuss its applications in communication

5 Explain about PCM transmitter and receiver system with a block diagram.

6 With a block diagram explain in detail about delta modulation.

Unit-4

1 Explain with block diagram about basic telephone system and its functions.

2 With neat Sketch explain in detail about ISDN network.

3 Explain in detail about Frequency and phase shift keying in digital communication.

4 Draw and explain about the data communication circuits and its characteristrics.

5 Explain the ISO-OSI Model architecture with the functionalities of each layer.

6 Explain in detail about types and functions of data modem used in communication.

Unit-5

1 What are the benefits of satellite communication systems? How the position / location of satellite tracked from the earth station? Derive the satellite link equations and component on it.

2 Explain in detail about the different types of satellites andtheir functions.

3 Describe the fundamental charecteristics of uplink,transpoder and downlink model of satellite system.

4 "With the block diagram explain the operation of fiber optic communication."

5 Explain in detail about multiple access techiques in satellite communication.

6 Draw the block diagram of fiber optical communication link.Explain the principle of operation of light sources detectors