BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY

QUESTION BANK

Unit Test-I (Shift:-I & II)

Program: - EJ

Semester: - III **Course: PEC(22334)**

Unit 1 Basics of Electronic Communication (12 M)

2 Marks Questions

1. State the need of Modulation.
2. State the frequency range of the following
   i) High Frequency ii) Low Frequency iii) Voice Frequency
3. Compare full duplex and half duplex on following points.
   i) Definition ii) Sketch iii) Examples.
4. State and explain concept of transmission bandwidth
5. Define Noise and noise figure.
6. Define Noise and state its types.

4 Marks Questions

7. Draw and explain the block diagram of basic communication system.
8. Explain different types of noise involved in communication system.
9. Draw and explain the Electromagnetic Spectrum.

Unit 2 AM and FM Modulation (18 M)

2 Marks Questions

10. Define i) Amplitude Modulation ii) Frequency Modulation iii) Phase modulation
11. A 10kw carrier is amplitude modulated by two sine waves to a depth of 0.5 & 0.6 resp. calculate total power content of modulated carrier.

12. Define following terms with respect to FM. i) Frequency deviation ii) Modulation Index iii) Deviation Ratio

13. Give mathematical expression of FM wave and give the meaning of each term in it.

14. Draw the time domain and frequency domain representation of FM wave.

15. Compare Narrowband and Wide band FM.

16. Draw the time domain and frequency domain representation of AM wave.

17. Define Modulation Index of AM wave.

4 Marks Questions

18. Explain the effect of modulation index on AM wave with waveforms.

19. Derive the expression for total power relation in AM.

20. Compare AM and FM signal with minimum 8 points.

21.Frequency modulated signal is represented by the voltage eqn. E(fm)=10sin(6*10^8t+5sin1250t)

Calculate, i) carrier frequency ii) Modulating frequency.

iii) Maximum power deviation.

iv) What power will this FM wave dissipate in 20 ohm resistor?

22. Show that AM wave consist of two side bands and carrier. Also prove that bandwidth of AM is double of the modulating frequency.

23.Draw AM waveform for m=0,m=50%,m=100%.

24. A 10 kw carrier is amplitude modulated of 75% depth of modulation by a modulating signal. Calculate side band power, total power and transmission efficiency of AM wave.

Unit 3 Transmitters and Receivers (14 M)

2 Marks Questions

25. State the need of AGC.

26. Define AM Demodulation .Draw its input/output waveforms.

27 . Draw the block diagram of Practical diode detector.

4 Marks Questions.

28.Draw and explain the working of Envelope Detector with waveforms. .

29.Draw and explain the block diagram of Superheterodyne receiver.

30. Compare high level and low level modulation for AM.