Question Bank (Unit test I)

Class: EJ4G **Sub: ACO (17440)** Even Sem 2013-14

Chapter 1

3 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 Marks Questions

4. Draw and explain the block diagram of communication system.
5. State and explain concept of transmission bandwidth.
6. Explain different types of noise involved in communication system.

Chapter 2

3 Marks Questions

1. Draw the frequency spectrum of AM.
2. Give AM signal representation in time domain.
3. Give the advantages of digital communication.
4. 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.

4 Marks Questions

5. Explain the effect of modulation index on AM wave with waveforms.
6. Derive the expression for total power relation in AM.
7. Compare high level and low level modulation for AM.
8. Sketch the labeled circuit diagram of collector modulated class C amplifier used for AM signal generation.

Chapter 3

3 Marks Questions

1. Define following terms with respect to FM.
   i) Frequency deviation ii) Modulation Index iii) Deviation Ratio
2. Give mathematical expression of FM wave and give the meaning of each term in it.
3. Draw frequency domain representation of FM wave.
4. Compare Narrowband and Wide band FM.

4 Marks Questions

5. Compare AM and FM signal with minimum 8 points.
6. Explain varactor modulator used for AM modulation.
7. Describe Pre and De-emphasis in case FM.
8. A 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?

CHAPTER 4

3 MARKS Questions

1. Draw and explain PAM generation system.
2. Draw neat diagram for PAM, PPM AND PWM.

4 MARKS Question

3. Compare PAM, PPM and PWM.

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3 MARKS

RADIO RECEIVERS

1)Define with diagram

a)Sensitivity b)selectivity c) fidelity

2)State the type of AGC with characteristics.

3)Sketch and explain TRF receiver.

4)Why limiter stage is used before detector and also state the value of if for am and FM radio receiver.

5)State need of AGC with characteristics.

6)What are disadvantages and advantages of super heterodynereceiver.

TRANSMISSION LINE

7)What is transmission line? Draw its general equivalent ckt.andRF equivalent ckt.

8)Define characteristics impedance and propagation const.

9)What are the losses in a transmission line,explain any one of them.

10) Define SWR, reflection co-efficient.

11)What do u mean by stub,single stub matching and double stub matching.

WAVE PROPOGATION

12) Define-a) virtual height

B) Maximum usual frequency

c) Critical frequency

13)Drawthe sketch for- a)sky wave propagation

b)Groundwave propagation

ANTENNA

14)Define- a) polarization

b) Beam width

c) Directive gain

4MARKS

RADIO RECEIVER

15)Sketch and explain super heterodyne receiver.

16)Draw and explain envelope detector.

17)Sketch and explain the operation of FM receiver.

18)Sketch and explain the operation of balance modulator.

Transmission line

19)Calculate the value of 20(min) for an air dielectric parallel wire transmission line.

20)What do you mean by standing wave.Derive an expression for SWR in terms of eta.

21)Sketch and explain BALUN.

Wave propogation

22)Draw and explain Duct propagation.

23)Draw and explain space wave propagation.

Antenna

24)Draw and explainfolded dipole antenna and also explain its radiation pattern with sketch.

25)Sketch and describe YagiUda Antenna with its radiation pattern.