SE - ~~EE~~ ET - sem - IV - old - PCE 02/06/2015

Q.P. Code : 4143

(OLD COURSE)

(3 Hours) **[Total Marks : 100**

N.B.: (1) Question **no. 1** is **compulsory**
(2) Attempt **any four** questions out of remaining six questions.
(3) Assume **suitable** data if necessary & state clearly.

1. Answer the following **(any four)**:- **20**
   (a) What is the purpose of AFC loop in FM?
   (b) What is aliasing? How can it be removed?
   (c) Explain FM noise traingle
   (d) Explain quantization with the help of suitable diagram.
   (e) Draw spectrum of AM wave. DSBSC & SSBSC wave.

2. (a) Draw the block diagram of an AM superhetrodyne receiver. Describe its operation & function of each stage. **10**

   (b) Define Amplitude Modulation & derive the equation for amplitude Modulated wave. **10**

3. (a) With the help of neat diagram & Phasor diagram explain the working of Foster seekly discriminator. **10**

   (b) Find the carrier & modulating frequencies, the modulation index & the maximum deviation of the FM wave represented by the voltage equation $e = 12\sin(6 \times 10^8 t + 5\sin 1250t)$. What power will this FM wave dissipate in a 10Ω resistor. **10**

4. (a) Explain how PAM signal can be generated & demodulated. **10**

   (b) Explain the working of balanced ring modualater to generate DSBSC signal. **10**

5. (a) Compare -
   (1) Am & FM (ii) FM & PM **10**

   (b) Explain the block diagram fo Adaptive delta modulation with waveforms. How does it reduce slope overload error? **10**

6. (a) State & prove sampling theorem. **10**

   (b) Draw the block diagram of pulse code modulation & explain each block. **10**

7. Write short notes on **any four** : **20**
   (a) Vestigial side band transmission.
   (b) Pre emphsis & De-emphasis.
   (c) Squelch circuit
   (d) PWM & PPM
   (e) Selectivity? Sensitivity.
