Sem-IV (OLD)

Principles Of Communication Engineering (OLD COURSE)

B10m)

...on. 2727-09.

...gular - May '09

(3 Hours)

VR-3627

[Total Marks : 100

N.B. : (1) Question No. 1 is compulsory.
(2) Attempt in all five questions.
(3) Assume suitable data if required.

1. Answer the following :-
   (a) Compare A.M. with F.M.
   (b) Explain delayed AGC and simple AGC.
   (c) Compare TDM and FDM.
   (d) Explain noise triangle in F.M. 20

2. (a) Explain the collector modulation with a neat sketch. 5
   (b) Distinguish between High level modulation and low level modulation. 5
   (c) Draw the spectrum of an AM waveform if the modulating signal is $m(t) = (\cos 2000 \pi t + 0.5 \cos 4000 \pi t)$ and carrier is $c(t) = 1.5 \cos (10000 \pi t)$ Also calculate the : 10
   (i) The total sideband power (ii) Bandwidth.

3. (a) Explain the Armstrong method of generating FM with a neat block diagram and phasor diagrams. 10
   (b) Explain pre-emphasis and de-emphasis in relation to F.M. sketch typical circuits. 10

4. (a) Draw a block diagram of a PCM system and explain the function of each block. 10
   (b) Explain any one method of SSBSC generation. 10

5. (a) Describe the following w.r.t. superheterodyne receivers : 10
   (i) Sensitivity
   (ii) Selectivity
   (iii) Image rejection
   (iv) Fidelity
   (v) Intermediate frequency.
   (b) Explain Adaptive delta modulation technique by compairing the same with delta modulation. 10

6. (a) Sketch the circuit and explain the working of Foster-Seeley discriminator. 10
   Gvie phasor diagrams :
   (i) fin = fc
   (ii) fin > fc
   (iii) fin < fc.
   (b) State and explain sampling theorem. Develop the concept of aliasing. When does it occur ? 10

7. Write short notes on any four :- 20
   (a) Vestigial sideband modulation techniques
   (b) Companding
   (c) Pulse modulation
   (d) ~~Ground wave propagation~~
   (e) Noise and its sources.