TE(ET) Sem V CBSGS AC 4/12/14

QP Code : 14945

(3 Hours) **[Total Marks : 80**

N.B. : (1) Questions 1 is **compulsory**.
(2) Attempt any three questions out of remaining five.
(3) Figures to the right indicate full marks.
(4) Assume suitable data if required and mention the same in answer shut.

1. Solve any five : **20**
   (a) Modulation index for AM should be less than one. Justify /Contradict.
   (b) Distinguish between narrow band FM and wideband FM.
   (c) Define noise figure and signal to noise ratio.
   (d) Explain double spotting with reference to radio receiver.
   (e) Explain aliasing error and aperture effect.
   (f) List the application of pulse communication.

2. (a) Explain low level and high level modulation techniques with the help of diagram. **10**
   (b) Explain Practical diode detector with delayed AGC in detail. **10**

3. (a) Explain the principle and working of transistor direct PM Modulator. **10**
   (b) With suitable diagram, explain the working of stabilized reactance modulator. **10**

4. (a) Explain independent sideband receive in detail. **10**
   (b) For a receiver with IF and RF frequencies of 455 KHz and 900 KHz respectively **10**
   Determine :
   (i) The Local Oscillator frequency
   (ii) Image frequency
   (iii) Image rejection ratio for a pre-selector Q of 80.

5. (a) Explain Pulse Code Modulator and demodulator using neat diagram. **10**
   (b) What are the drawbacks of delta modulation. Explain the method to overcome these drawbacks. **10**

6. (a) Draw the FDM system to combine three voice channels. Each voice channel occupies a bandwidth of 4 KHz. The common voice channel has a bandwidth of 12 KHz from 100 KHz to 112 KHz. **10**
   (b) Classify and explain different types of noise affecting communication. **10**