SE/EXTC/SEM IV/PCE/CBCS

29 MAY 2019

Duration :3hrs

Max.Marks:80

N.B. (1) Question No. 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 sheet.

1. Solve **any four** 20
   (a) Why AGC is required in radio receiver?
   (b) Explain Noise figure and noise factor.
   (c) Why IF is selected as 455 KHz in AM?
   (d) Explain natural top and flat top sampling
   (e) Compare narrow band FM and wideband FM.

2. (a)List the methods used for SSB generation. Explain the third method of SSB generation with suitable diagram. 10
   (b) The unmodulated carrier power of AM transmitter is 10 Kw and carrier frequency is 2 MHz. The carrier is modulated to a depth of 50% by an audio signal of 5KHz.Assume R=1Ω. 10
   i) Determine the total transmitted power.
   ii) Determine the SSB power.
   iii) Percentage of power saving if SSB is transmitted.
   iv) Draw the frequency spectrum and find the bandwidth.

3. (a) Explain FM demodulator using PLL with suitable diagram. 10
   (b) Explain amplitude limiting and thresholding in detail with its significance. 10

4. (a)) Explain Varactor diode modulator ? 10
   (b) With the help of suitable waveforms explain generation and detection of PPM. 10

5. (a) Explain independent side band receiver in detail with block diagram. 10
   (b) Compare Amplitude, Frequency and phase modulation. 10

6. Write short note on **(any four)** 20
   (a) Aliasing error and aperture effect
   (b) Applications of Pulse communication
   (c) VSB transmission with its application
   (d) Time division Multiplexing (TDM)
   (e) Low level and high level modulation

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