8116

BT-3/D09

ANALOG COMMUNICATION

Paper : ECE-203(E)

Time : Three Hours] [Maximum Marks : 100

Note : Attempt any *five* questions. All questions carry equal marks.

1. (a) Discuss noise in FM reception. 10

   (b) Explain the various sources of noise. 10

2. (a) What is SSB modulation ? Explain the benefits of using SSB modulation. 10

   (b) Explain Phase discrimination method. 10

3. (a) Describe Phase-locked looped demodulator. 10

   (b) An FM wave is applied to a square-law device with output voltage V_2 related to input voltage V_1 by $V_2 = aV_1^2$ where a is a constant. Explain how such a device can be used to obtain an FM wave with a greater frequency deviation than available at the input. 10

4. (a) Explain the tracking and alignment of receivers. 10

   (b) Explain the block diagram of AM transmitter. 10

5. (a) Derive mathematical representation of random noise. 10

   (b) Explain the noise in reactive circuits. 10

6. (a) Derive power relations in AM wave. 10

   (b) Explain the Spectrum of AM wave. 10

7. (a) Draw the circuit diagram of a ratio detector and explain its operation. How is amplitude limit obtained in this detector ? 10

   (b) Compare FM and PM signals. 10

8. Write short notes on the following :

   (a) AGC. 7

   (b) FDM. 6

   (c) TRF receivers. 7

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