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[5668]-140

S.E. (Electronics/E&TC) (II Semester) EXAMINATION, 2019

ANALOG COMMUNICATION

(2015 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Answer Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4,
Q. No. 5 or Q. No. 6, Q. No. 7 or Q. No. 8.

(ii) Neat diagrams must be drawn wherever necessary.

(iii) Figures to the right indicate full marks.

(iv) Your answers will be valued as a whole.

(v) Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.

(vi) Assume suitable data, if necessary.

1. (A) Enlist the SSB generation methods. Explain any *one* method of SSB generation in detail. [6]

(B) A SSB transmitter radiates 0.5 kW when modulation percentage is 60%. How much of carrier power is required if we want of transmit the same message by an AM transmitter ? [6]

P.T.O.

Or

2. (A) Draw and explain the block diagram of superheterodyne receiver mentioning the typical frequencies at different point. [6]
- (B) With the help of circuit diagram explain a simple diode detector used for AM detection. Enlist the drawbacks associated with it. [6]
3. (A) What are the methods of FM generation ? Explain any *one* method in detail. [6]
- (B) Compare NBFM and WBFM. [6]

Or

4. (A) Explain different methods of FM detection. Explain any *one* method in detail. [6]
- (B) Explain with suitable diagram importance of pre-emphasis and de-emphasis in the performance of FM system. [6]
5. (A) What are the different types of Noise ? Explain any *five* types in detail. [7]
- (B) If $R_1 = 10 \text{ k}\Omega$ and $R_2 = 15 \text{ k}\Omega$. Calculate the thermal noise generated by :
- (i) R_1 in series with R_2
- (ii) R_1 in parallel with R_2
- Assume 20 MHz noise bandwidth and 27° temperature. [6]

Or

6. (A) A mixer stage has noise figure of 20 dB and this is preceded by an amplifier that has noise figure of 9 dB and an available power gain of 15 dB. Calculate the overall noise figure referred to the input. [7]
- (B) Explain the performance of baseband system in presence of noise. [6]
7. (A) Draw and explain generation and detection of PAM. [7]
- (B) Compare PAM, PWM and PPM. [6]

Or

8. (A) State sampling theorem and explain the types of sampling. [7]
- (B) Draw and explain PCM transmitter. Also enlist the drawbacks associated with it. [6]