

Total No. of Questions—8]

[Total No. of Printed Pages—3

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[5252]-538

**S.E. (Electronics/ETC)(Second Semester)**

**EXAMINATION, 2017**

**ANALOG COMMUNICATION**

**(2015 PATTERN)**

**Time : Two Hours**

**Maximum Marks : 50**

- N.B. :—** (i) Solve Q. No. 1 or Q. No. 2; Q. No. 3 or Q. No. 4; Q. No. 5 or Q. No. 6 and Q. No. 7 or Q. No. 8.
- (ii) Neat diagrams must be drawn wherever necessary.
- (iii) Figures to the right indicate full marks.
- (iv) Use of logarithmic tables, slide rule, Mollier charts, electronic, pocket calculator and steam tables is allowed.
- (v) Assume suitable data, if necessary.

1. (a) What is modulation ? Explain need of modulation and its types. [6]

(b) State and compare different SSB generation methods. [6]

*Or*

2. (a) Discuss the Direct Method of FM generation. [6]

(b) What are the significant changes done in superheterodyne receiver over TRF Receiver ? [6]

P.T.O.

3. (a) What is double spotting and image frequency rejection ratio in radio receiver ? [6]

(b) Derive the expression for FM Modulated wave for sinusoidal modulating signal [6]

$$e = A \sin \theta.$$

Or

4. (a) State the significance of Pre-emphasis and de-emphasis in FM. [6]

(b) How integrated circuit helps to detect FM Signal ? [6]

5. (a) Define Noise and explain various sources of Noise. [7]

(b) Discuss the behaviour of baseband system in presence of Noise. [6]

Or

6. (a) Consider a radio receiver with RF amplifier having noise figure 3 dB and gain of 12dB followed by a mixer with noise figure 12 dB and conversion gain 20 dB. Calculate overall noise figure and noise temperature. [6]

(b) Discuss the behaviour of amplitude modulated system in presence of Noise. [7]

7. (a) Discuss the role of sampling theorem in digitization of signal. [6]

(b) "PCM is integral part of ADC". Comment ? [7]

Or

8. (a) Explain distortion occur in process of sampling and its remedial solutions. [7]

(b) Describe types of sampling with their merits and demerits. [6]