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Communication Systems - I
(143105 / 183105 / 233105)

P. Pages : 2

Time : Three Hours   Max. Marks :80

Instructions to Candidates :
1. Do not write anything on question paper except Seat No.
2. Answer sheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Use of non programmable calculator is allowed.
5. Attempt **any two** sub questions from each unit. Figures to right indicate full marks.
6. Assume suitable data if necessary.

UNIT - I

1. a) Define modulation ? Explain it's need and advantages ?   8

    b) Define noise ? State and explain the types of noise ?   8

    c) i) Write short note on noise in Reactive circuits.   4

        ii) An amplifier has an actual input resistance of 5kΩ and equivalent noise resistance of 1kΩ. What is total input (effective) resistance of the amplifier ?
        What is rms noise voltage at room temperature for bandwidth of 1KHZ.   4

UNIT - II

2. a) Derive the expression for AM wave.   8

    b) Explain FET balance modulator.   8

    c) i) Compare High level and low level modulation.   4

        ii) A 400 W carrier is modulated to a depth of 75 t ;
        Calculate total power in the modulating wave.   4

UNIT - III

3. a) Derive the equation for FM wave. **8**

b) Explain FET reactance modulator. **8**

c) i) Give comparison between wideband FM and Narrow band FM. **4**

ii) Explain preemphasis and Deemphasis. **4**

UNIT - IV

4. a) Draw and explain the block diagram of super heterodyne receiver. **8**

b) Explain the working of ratio detector. **8**

c) Define :

i) Selectivity and sensitivity. **4**

ii) Fidelity and Image Frequency. **4**

UNIT - V

5. a) Give the properties of Fourier transform. **8**

b) Explain TDM in detail. **8**

c) Explain :

i) Sampling Theorem. **4**

ii) Pulse Amplitude Modulation. **4**

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