

5E3129**5th Semester (Main/Back) Examination, Dec. 2010/Jan. 2011****Electrical Engineering****5EE6.2 Principle of Communication Systems****Time : 3 Hours****Maximum Marks : 80****Min. Passing Marks : 24****Instructions to Candidates:**

Attempt any five questions, selecting one question from each unit. All questions carry equal marks.

Unit - I

1. a) Derive an expression to calculate equivalent noise temperature in cascaded circuits. (10)
- b) Discuss Noise figure using suitable mathematical expression. (6)

OR

2. Briefly describe the following :

- i) Resistor Noise. (5)
- ii) Noise temperature. (5)
- iii) Noise Bandwidth. (6)

Unit - II

3. Draw the circuit diagram of Balanced Modulator and Discuss this. How DSB-SC wave is generated by this circuit? Show mathematically. (5+5+6=16)

OR

4. a) Calculate power relations in carrier and side bands in full AM wave. (8)
- b) Discuss Envelope detector working by drawing suitable diagram and circuit of detector. (8)

Unit - III

5. a) How wide band FM can be generated by narrow band FM? Show by using suitable block diagram and associated mathematical expression. (8)
- b) Draw the Block diagram of PLL demodulator and explain its working. (8)

OR

6. a) Draw the block diagram of FM receiver. Discuss all its blocks to explain complete working of FM receiver. (10)
- b) Compare AM and FM by taking suitable parameters one by one. (6)

Unit - IV

7. Draw an expression to calculate S/N ratio and figure of merit for square law demodulator. Assume suitable parameters it required. (16)

OR

8. Draw an expression to calculate S/N ratio and figure of merit for FM demodulator taking single tone modulation case. (16)

Unit - V

9. Draw the circuit diagram and discuss working of PAM modulator and PAM demodulator. (8+8=16)

OR

10. a) Derive Sampling Theorem. (8)
- b) Discuss PPM demodulation scheme. (8)
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