

Code :RR311303

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III B.Tech I Semester(RR) Supplementary Examinations, May 2011
COMMUNICATION ENGINEERING
 (Electronics & Control Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. Explain the frequency discriminator method and phase discrimination method of generating SSB wave?
2. (a) In an Armstrong Modulator the crystal oscillator frequency is 200 KHz. It is desired in order to avoid distortion to limit the maximum angular deviation to $\phi_m = 0.2$. The system is to accommodate modulation frequencies down to 40Hz. At the output of the modulator the carrier frequency is to be 108 MHz and the frequency deviation 80KHz. Select multiplier and mixer oscillator frequencies to accomplish this.
 (b) Explain the effect of random noise on the output of an FM receiver fitted with amplitude limiter. Develop the concept of noise triangle.
3. (a) With a block diagram , explain the working of phase modulated FM transmitter?
 (b) Explain the working of frequency modulated transmitters using reactance tube modulators.
4. (a) What are the advantages of Superheterodyne receiver as compared to a TRF receiver?
 (b) Explain clearly what is meant by image frequency in a superheat receiver and how it can be eliminated.
 (c) Define conversion transconductance of a mixer. With the help of a typical circuit diagram, explain the working of a separately excited mixer.
5. (a) The noise factor of a radio receiver is 15:1. Calculate its noise figure.
 Determine the output S/N ratio when the input S/N ratio to the receiver is 35 db.
 (b) The parallel tuned circuit at the input of a radio receiver is tuned to resonate at 120 MHz by a capacitance of 25 pF. The Q's factor of the circuit is 30. The channel bandwidth of the receiver is limited to 10 KHz by the audio sections. Calculate the effective noise voltage appearing at the input at room temperature.
6. (a) Define the term Multiplexing. Explain TDM with the help of block diagram.
 (b) Compare TDM and FDM.
7. What is the main draw back of delta modulation and explain how it is eliminated in Adaptive delta modulation with the help of block diagram and waveforms.
8. (a) Explain mechanical, electrical, functional specification of E1A - 232 interface standard.
 (b) What is the purpose of a null modem?
