

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]
(2125)

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B. Tech 7th Semester Examination
Communication Engineering (NS)
EE-415

Time : 3 Hours

Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Section A is Compulsory. From section B, C, D, E attempt any one question from each section.

SECTION - A

1. (a) Elaborate the term Pre-emphasis.
- (b) What do you mean by AGC?
- (c) State Sampling Theorem.
- (d) What do you mean by IFRR?
- (e) Draw frequency spectrum of DSBSC.
- (f) Write relation between Total power (P_t) and Carrier Power (P_c).
- (g) What are the types of Pulse Modulation?
- (h) What is the need of VSB in communication system?
- (i) What do you mean by Modulation Index?
- (j) Why we use Super Heterodyne receiver in AM?
(2×10=20)

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SECTION - B

2. Why AFC loop is important in FM Transmitter? Explain FM transmitter which includes AFC Loop. (20)
3. In RF Amplifiers what do you think the different desirable characteristics? (20)

SECTION - C

4. For a citizen band receiver using high side injection with an RF carrier of 27 MHz and IF centre frequency of 455 KHz, determine (a) Local Oscillator frequency (b) Image frequency (c) IFRR for a preselector Q of 200 (d) preselector Q for IFRR = 8 (20)
5. Explain the AM transmitter for High level modulation. (20)

SECTION - D

6. The antenna current of an AM broadcast transmitter, modulated to depth of 40% by an audio sine wave is 11 amp. It increases to 12 amp as a result of simultaneous modulation by another audio sine wave. What is the modulation index due to this second wave? (20)
7. Compare TDM with FDM. Which technique is better, elaborate? (20)

SECTION - E

8. What are the differences between Direct and Indirect Method of FM modulation Techniques? Which Technique is better and why? (20)
9. Explain the following terms associated with Radio receivers.
(a) Fidelity.
(b) Double spotting. (10+10=20)