[Total No. of Questions - 9] [Total No. of Printed Pages - 2]
(2067)

17060(M)

B. Tech 4th Semester Examination

Communication Engineering (CBS)

EE-404

Time : 3 Hours Max. Marks : 60

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 : Attempt five questions in all, selecting at least one question from each section A, B, C, and D. Section E is compulsory.

SECTION - A

1. What is Modulation? Why modulation is used in communication? Explain different types of analog modulation techniques. (12)

2. (a) Explain vestigial side band. (6)

   (b) Differentiate between time division multiplexing (TDM) and frequency division multiplexing (FDM) techniques. (6)

SECTION - B

3. Explain the following performance measures of radio receivers:

   (i) Selectivity.

   (ii) Sensitivity.

   (ii) Fidelity.

   (iv) Image frequency rejection. (12)

4. (a) Explain the function of collector modulator with the help of circuit diagram. (6)

   (b) How would you explain double conversion AM receiver. (6)

SECTION - C

5. Draw the block diagram of Armstrong method and explain its operation for FM generation. Why this method is called indirect method? (12)

6. (a) What is Pre-emphasis and De-emphasis? Why it is required? (6)

   (b) Draw the circuit diagram of ratio detector and explain its operation. What is the advantage of this circuit over Foster-Seeley discriminator? (6)

SECTION - D

7. State and prove sampling theorem. Obtain the reconstructed signal and explain about aliasing? (12)

8. (a) Compare between ASK, QPSK and FSK digital modulation techniques. (6)

   (b) What are uniform quantization, noise and SNR in PCM? (6)

SECTION - E

9. Attempts all questions.

   (a) Draw the frequency spectrum of AM and FM.

   (b) Explain why digital communication is preferred over analog communication?

   (c) What are different types of AM modulators?

   (d) How will you convert a frequency modulator into a phase modulator?

   (e) What are the different types of interferences encountered in radio receivers?

   (f) What are low level and high level modulations?

(2×6=12)