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

Dec.-23-0413

EE-404 (Communication Engineering)

B.Tech. 4th (CBCS)

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 One Question each from section A, B, C and D. Section E is Compulsory.

SECTION - A

1. Explain about types of communication based on modulation system. (10)

2. (a) Give comparison between frequency division multiplexing & time division multiplexing. (5)

   (b) What is DSBSC modulator? Explain its feature also. (5)

SECTION - B

3. Explain the concept of amplitude modulation & drive the mathematical expression for the spectrum of an AM wave and plot it. (10)

4. Briefly explain the function of each of the blocks in the super heterodyne receiver. (10)

SECTION - C

5. (a) Explain following:-

   (i) FET reactance modulator.

   (ii) Transistor reactance modulation. (10)

6. (a) Explain the working of balanced frequency discriminator with the help of circuit diagram. (5)

   (b) What is the function of RC phase shift modulator? Explain with the help of circuit diagram. (5)

SECTION - D

7. What is digital modulation? Explain the different modulation techniques. (10)

8. (a) What is ADM? Explain its working. (5)

   (b) What is sampling? Discuss about flattop sampling. (5)

SECTION - E (Compulsory)

9. (a) Explain the need of modulation in a Communication system.

   (b) What do you meant by the term amplitude modulation?

   (c) State application of AM.

   (d) Explain the salient features of wideband FM system.

   (e) What is pre-emphasis?

   (f) What is the need for wireless communication?

   (g) What is the operating principle of a FM receiver?

   (h) What is sampling?

   (i) Why indirect method of FM generation is preferred to the direct method?

   (j) What is BW of M-ary PSK? (10×2=20)