

Total No. of Questions—8]

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BE—IV/6(A)

212824

(Comp. Engg.)

COMMUNICATION ENGINEERING.—COURSE NO. EC-401

Time Allowed—3 Hours

Maximum Marks

*Note :— Attempt five questions in all, select at least two
from each Section.*

Section I

1. (a) What is modulation ? Why is it needed ?
(b) Compare energy spectral density with the power spectral density.
2. (a) Discuss amplitude modulation. How A.M. wave is generated ?
(b) Explain different type of signals and systems.

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3. (a) Explain how the basic reactance modulator is used for the generation of F.M.

(b) What are the different methods of S.S.B. generation ?

Explain any *one* of them. 10,10

4. (a) Draw the comparison between Narrow band FM and Wideband F.M.

(b) How is FM detected using balanced slope detector ?

10,10

Section II

5. (a) What is sampling ? Explain different types of sampling.

(b) Explain delta modulation in detail. 10,10

6. Explain the generation and demodulation of PCM signals.

What is the advantage of PCM over analog communication

system ? 20

7. (a) Explain the generation and demodulation of FSK signal.

- (b) A discrete source emit one of the five symbols one every millisecond. The symbol probabilities are $\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}$ and $\frac{1}{16}$ resp. Find the source entropy and the information rate. 10,10

8. Write short notes on : 20

(a) TDM and FDM

(b) Entropy.