

(3 Hours)

Total Marks: 80

N.B.: (1) Question No. 1 is compulsory.

(2) Attempt any three questions out of remaining five.

(3) Figures to the right indicate full marks.

(4) Assume suitable data if required and mention the same in answer sheet.

Q.1 Solve any four (20)

- a) Explain the need of modulation in communication system.
- b) Explain narrow band and wideband FM.
- c) What do you mean by double spotting in radio receiver.
- d) List the advantages and disadvantages of Digital communication.
- e) Write a note on aliasing error and aperture effect.

Q.2 (a) Explain the different types of noise in communication. (10)

(b) Explain concept of AM wave with related equations. (10)

Q.3 (a) With the help of suitable diagrams explain generation and detection of PWM signal. (10)

(b) Draw and explain Delta modulation transmitter and receiver. (10)

Q.4 (a) Explain with block diagram and waveform AM Super - heterodyne radio receiver. (10)

(b) What is multiplexing? Explain FDM in detail. (10)

Q.5 (a) What are different methods of FM generation? Draw circuit diagram and explain the principle of reactance modulator? (10)

(b) Explain VSB transmission with its applications. (10)

Q.6 Write a Short notes on (Solve any Four) (20)

- a) Generation and detection of PPM
- b) Phase shift method of AM generation (SSB)
- c) Applications of FM
- d) Sampling Techniques
- e) Delayed AGC
