

(3 Hours)

[Total Marks: 80]

N.B: 1. Question no. 1 is compulsory.

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

- Q1. Attempt all four: 20M
- Compare narrow band and wide band FM systems.
 - Illustrate the operation of VSB transmission.
 - Draw the frequency spectrum of AM wave and explain.
 - Explain sampling theorem.
- Q2. (a) Draw the block diagram of single side band AM transmitter and explain each block. 10M
- (b) How does phase shift method efficiently suppress unwanted side band? Explain with diagram. 10M
- Q.3 (a) Explain the generation of direct FM signals. What is the difference between direct and indirect FM. 10M
- (b) What is Pre- emphasis and De-emphasis? Why is it used? 10M
- Q.4 (a) What is demodulation? Explain balanced slope detector method of FM demodulation with the help of neat diagram. 10M
- (b) Draw the block diagram of the following and explain TRF Receiver and Super heterodyne Receiver 10M
- Q.5 (a) Explain the terms PAM, PWM, PPM. Explain the principle of delta modulation. 10M
- (b) Explain different sampling techniques. Explain aliasing error and aperture effect. 10M
- Q.6 Write in brief any two 20M
- Varactor diode modulator
 - Foster Seeley discriminator.
 - Pulse Communication.