**Duration :3hrs** **Max.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**

**1.** Solve any four **20**

(a) Explain practical diode detector.

(b) Define sensitivity, image frequency rejection and fidelity for radio receiver.

(c) What is quantization? Explain types of quantization.

(d) Why IF is selected as 455 KHz in AM?

(e) List the applications of pulse communication.

**2.** (a) Explain concept of AM Wave with related equations and waveforms. **10**

(b) Draw the block diagram of phase cancellation SSB generator and explain how carrier and unwanted sidebands are suppressed? **10**

**3.** (a) Explain the operation of Foster seeley discriminator with the help of circuit diagram and phasor diagram. **10**

(b) Explain the principle and generation of indirect method of FM generation. **10**

**4.** (a) What are the drawbacks of delta modulation? Explain the method to overcome these drawbacks. **10**

(b) With the help of suitable waveforms explain generation and detection of PPM. **10**

**5.** (a) Explain Super heterodyne radio receiver in detail with block diagram. **10**

(b) Explain VSB Transmission in detail with its application. **10**

**6.** Write short note on(any four) **20**

(a) Compare FM and PM

(b) FM noise triangle

(c) Noise figure and noise factor

(d) Frequency division Multiplexing (FDM)

(e) Pre emphasis and de-emphasis circuits

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