

Con. 6046-11.

MP-3872

(3 Hours)

[ Total Marks : 100

**N.B. :** (1) Question No. 1 is **compulsory**.(2) Answer any **four** questions out of remaining **six** questions.(3) **Figures** to the **right** indicate **full** marks.(4) Assume **suitable** data wherever **necessary**.

1. (a) AM is the waste of power and bandwidth explain. 10  
 (b) Compare AM and FM.  
 (c) Explain Noise triangle.  
 (d) Explain sampling theorem.
  2. (a) Explain with block diagram working of superhetrodyne receiver ? 10  
 (b) Explain FET reactance modulator what is its drawback ? 10
  3. (a) Explain the working of delta modulator with waveform. 10  
 (b) An AM transmitter supplies 20 kW of carrier power to 50  $\Omega$  load. It is 80% modulated by 5 kHz sinewave. The carrier frequency is 2 MHz. 10
    - (i) Sketch the Frequency Spectrum
    - (ii) Calculate total Average Power
    - (iii) Calculate RMs voltage of the AM signal
    - (iv) Calculate peak voltage of the AM signal.
  4. (a) Explain block diagram of PCM and quantization process in detail. 10  
 (b) Explain the working of Foster-Seely discriminator. 10
  5. (a) Explain generation and detection of ASK in detail. 10  
 (b) What are the advantages of multiplexing technique. Explain TDM in detail ? 10
  6. (a) Explain working of balance Modulator used to generat DSB-SC signal ? 10  
 (b) Explain PWM modulation using ramp and pedestal generator with waveform. 10
  7. Write short notes on :- 20
    - (a) Characteristics of AM receiver
    - (b) Companding process
    - (c) Emphasis and De-emphasis ckt
    - (d) Comparision of PAM PWM and PPM.
-