

(3 Hours)

Marks :80



- N.B (1) Question No. 1 is compulsory  
(2) Out of remaining questions attempt three  
(3) Figures to right indicate full marks.

- Q1. Solve any four from the following (20)
- a) Compare PCM & DELTA modulation
  - b) Different types of communication channel
  - c) State advantages & disadvantages of ground wave propagation
  - d) Explain in brief noise triangle in FM
  - e) What do you mean by alising .how it can be avoided
- Q2. A) Binary data 11010101 is transmitted over a baseband channel.  
Draw the waveform for transmitted data using following format (10)
- a) Unipolar NRZ (b) unipolar RZ (c) Bipolar RZ (d) split phase Manchester
  - (e) Polar Quaternary NRZ.
- B) Explain generation & demodulation of PPM (10)
- Q3. (A) Explain Foster Seeley discriminator with neat diagram. (10)
- (B) Explain following noise parameter
- a) Noise figure b) Noise factor c) Noise temperature d) S/N ratio (6)
- (C) What is the role of antialiasing filter in sampling (4)
- Q4. (A) Draw the block diagram of analog & digital communication system  
& explain each block in it in brief. (10)
- (B) What are the limitations of TRF receiver .How these are avoided in  
Super heterodyne receiver. (10)
- Q5. (a) With reference to sky wave propagation explain the following term
- (i) Virtual height (ii) MUF (iii) skip distance (iv) skip distance zone (10)
- (b) State & explain sampling theorem for low pass band limited signal (6)
- (c) Write Fourier transform of unit step, Delta & Gate function (4)

- Q6
- a) compare DSB-FC, DSB-SC &SSB. & hence calculate total power in following Forms of AM. I) DSB-FC & SSB-SC where A 400 W carrier is modulated to Depth of 75 %. (10)
- b) Compare ASK, FSK & PSK (6)
- c) Explain in brief Inter symbol interference. (4)