Q.P. Code : 551403

(3 hours)

Marks : 80

Note : 1. Question **No. 1** is **compulsory**.
2. Attempt **any three** questions from the remaining questions.
3. Assume suitable data wherever necessary.

1. Solve Following. (Any **four**) 20
   a) A broadcast radio transmitter radiates 5kW power when the percentage modulation is 60. Determine carrier power.
   b) Compare NBFM and WBFM.
   c) What are the different types of quantization errors? Explain with suitable diagram.
   d) Describe FM Telemetry.
   e) Explain GPIB Bus.

2. a) With a suitable diagram explain adaptive delta modulation. 10
   b) Compare AM and FM. 10

3. a) Compare PAM/PWMIPPM. 10
   b) Draw and explain working of Super-heterodyne Receiver. 10

4. a) Describe the importance of different layers of OSI reference model. 10
   b) An AM transmitter supplies 10kW of carrier power to a 50 Ohm load. It 10
      operates at a carrier frequency of 1.2MHz and is 80% modulated by a 3 kHz sine wave.
      i) Sketch neatly labelled frequency spectrum.
      ii) calculate the total average power in the signal in watts.

5. a) Describe the various modes of data transmission used in communication. 10
   b) Compare TDM and FDM. 10

6. a) With a neat diagram explain the working of Armstrong method of FM 10
      generation.
   b) Explain the phase shift method of SSB generation. 10