Q.P.Code: 39180

[Time: 3 Hours]   [Marks:80]

NB:
1.   Q. 1 is compulsory
2.   Attempt any three questions out of remaining five.
3.   Figure to the right indicate full marks.
4.   Assume suitable data if required and mention the same in solution.

Q.1 Solve the following   20
   a) Distinguish between narrowband and wideband FM.
   b) What is companding?
   c) Why AGC is required in radio receivers?
   d) Explain aliasing error and aperture effect.
   e) Explain various types of noise affecting communication system.

Q.2a) What are the drawbacks of delta modulation? Explain adaptive delta
       modulation in detail.   10
   b) What is signal multiplexing? Explain TDM and FDM in detail.   10

Q.3 a) State and prove sampling theorem for low pass bandlimited signals.   10
    b) Explain practical diode detector with suitable diagram.   10

Q.4 a) What are different methods of FM generation? Explain reactance modulator
        in detail.   10
    b) Explain how PPM is generated from PWM   10

Q.5 a) Explain superheterodyne receiver   10
    b) Explain VSB transmission   10

Q.6 Write note on (any four)   20
   1. Quadrature amplitude modulation
   2. Amplitude limiting and thresholding
   3. Double spotting
   4. Low level and high level modulation
   5. PCM and DPCM

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