SE IV CBGS ETRX
Fundamentals g comm syst

QP Code : 548203

(3 Hours) [Total Marks : 80

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

1.   Answer **any four** questions from the following :-   20
   (a) Calculate the percentage power saving in AM modulated wave to a depth of 100 percent, when the carrier and one of the sidebands are suppressed.
   (b) Describe briefly the forms of various noises.
   (c) Explain natural and flat top sampling compare the two.
   (d) Explain companding and its need in communication.
   (e) What is ionosphere? How does it help in Electromagnetic wave propagation.

2. (a) With the help of Block diagram explain superheterodyne Receiver.   10
   (b) The output voltage of a transmitter is given by 500 (1+0.4 sin 3140 t) sin   10
   6.28 t. This voltage is fed to a load of 600 Ω resistance Determine
       (i)   Carrier frequency   (ii)   Modulating frequency
       (iii)   Carrier power   (iv)   Mean Power output
       (v)   Peak Power output

3. (a) Describe delta modulation system. What are its limitations? How can be   10
   they overcome?
   (b) Explain Armstrong method of FM generation with the help of a neat block   10
   diagram and phasor diagram.

4. (a) Explain the following terms as applied to wireless communication.   10
       (i)   Signal to -noise ratio
       (ii)   noise figure
   (b) Explain the operation of the balanced slope detector using a circuit diagram   10

5. (a) Explain generation of PAM, PPM and PWM with waveforms.   10
   (b) State and explain important parameters of radio receiver.   10

6. Write short notes on any **three** :-   20
   (a)   AGC   (b)   FM noise triangle
   (c)   FDM and TDM   (d)   Pre-emphasis and De-emphasis