Q.P. Code : 25939

[Time: Three Hours]   [Marks:80]

Please check whether you have got the right question paper.

N.B: 1. Question.No.1 is compulsory.
         2. Attempt any three questions out of remaining five questions.
         3. Assume suitable data if needed.

Q.1   Attempt any four questions: 20
   a) Write note on super heterodyne receiver.
   b) What is modulation? Why it is necessary?
   c) Explain in brief Signal to noise ratio and noise figure.
   d) Compare NBFM and WBFM.
   e) Compare DSB, SSB, VSB, ISB modulation.

Q.2 a) Explain any one method of FM generation.   10
     b) Explain any one method of amplitude modulation in detail.   10

Q.3 a) Explain with the help of neat sketches voltage, current and position telemetry.   10
     b) Explain various communication modes as simplex, half duplex and duplex in detail. 10

Q.4 a) When the modulating frequency in an FM system is 400Hz and the modulating voltage is 2.4V, the   10
         modulation index is 60. Calculate the maximum deviation. What is the modulating voltage is
         simultaneously raised to 3.3V?
     b) Classify and explain various noise sources that affect communication and derive Friss formula for   10
         total noise factor.

Q.5 a) Explain in brief: 10
         i)   Frequency shift keying (FSK)
         ii) Amplitude shift keying (ASK)
     b) Explain Delta modulator and demodulator in detail.   10

Q.6   Write short notes on any four: 20
   a) PAM Telemetry
   b) Pulse Code Modulation
   c) DPSK
   d) TDM and FDM
   e) OSI reference model

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