TE - sem - V - old - Electrical

CE

7/12/15

QP Code : **1740**

(3 Hours) **[Total Marks : 100**

N.B. : (1) Question No. **1** is **compulsory**.
(2) Attempt any **three** questions from **remaining** question.
(3) Assume **suitable data** if **required**.

1. (a) Write the difference between BPSK and DPSK. **20**
   (b) Derive expression for entropy.
   (c) Explain need for modulation for long transmission.
   (d) Draw PCM transmitter and receiver.

2. (a) Draw and explain BPSK transmitter and receiver with the help of neat waveform. **10**
   (b) Explain Delta modulation. **10**

3. (a) Write short notes on Telemetry. **10**
   (b) Compute the Huffman code for this source moving the combined symbol as High as possible and compute efficiency. **10**

Symbol	S0	S1	S2	S3	S4	S5	S6
Probability	0.25	0.25	0.125	0.125	0.125	0.0625	0.0625

4. (a) Explain Phase Discriminator. **10**
   (b) Explain balanced slope detector. **10**

5. (a) Draw the spectrum of an AM waveform if the the modulation signal is $m(t) = (\cos 2000\,\pi t + 0.5 \cos 4000\,\pi t)$ and carrier is $c(t) = 1.5 \cos (1000\,\pi t)$. Also calculate the total power, sideband power and bandwidth. **10**
   (b) Draw and explain TRF receiver and give disadvantages of TRF. **10**

6. Write short notes on :—
   (1) Image frequency and its rejection. **10**
   (2) Quantization process. **10**

7. (a) What is the methods of suppress the unwanted sideband, explain in brief any one method ? **10**
   (b) Explain and prove properties of Fourier transform. **10**

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QP-Con. 10114-15.