T.E- V Sem - Biomed

Principles of Communication Engineering

(9)

11/5/16

Q.P. Code : **31055**

(3 Hours) [Total Marks : 80

N.B. : (1) Question No. 1 is **compulsory.**
(2) Attempt any **three** questions out of the remaining **five** questions.
(3) **Figures** to the **right** indicate **full** marks.
(4) Assume **suitable** data wherever **necessary.**

1. (a) Explain noise factor and noise figure in communication system. 5
(b) Explain Automatic Frequency Control. 5
(c) Draw and explain DPCM Transmitter. 5
(d) Explain generation of PWM with neat diagram. 5

2. (a) Draw and explain the block diagram of PCM receiver using neat graphs. 10
(b) Explain Varactor Diode method for FM generation in detail and state the advantages & disadavantages. 10

3. (a) A modulating signal 20 sin ($2\pi*5*10^3t$) is used to modulate a carrier signal 40 sin ($2\pi*10^5t$). Find the 10
(i) Modulation index of sideband components.
(ii) Sideband power and Total Power across a load resister of 50Ω
(iii) Transmission efficiency
(iv) Draw frequency rpectrum.
(b) Explain generation and coherent detection of ASK in detail. 10

4. (a) Explain the working of balanced slope detector using neat circuit diagram and graphs. 10
(b) Explain the working of diode ring modulator of DSBSC generation with waveforms. 10

5. (a) Explain PCM-TDM system. 8
(b) Draw and explain the working of double conversion receiver. 8
(c) Explain Double Spotting giving example. 4

6. (a) Discuss the hierarchy in FDM. 5
(b) State and explain Sampling theorem. 5
(c) Explain high level modulated AM Transmitter. 5
(d) Explain noise amplitude limiting using ratio detector. 5

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