S.E. IT. Sem III CBGS M-14

Sub - PADC. 22/5/14

QP Code : NP-18658

(3 Hours) **[Total Marks : 80**

N.B. : (1) Question **one** is compulsory.
(2) Attempts any **three** question from remaining question.
(3) Assume suitable data if necessary.

1. (a) Explain friiss transmission formula. **20**
(b) What are the energy signal and power signals
(c) Explain Ask system.
(d) Compare pcm and Delta modulation.

2. (a) Explain the operating principle, working of transmitter and receiver of BPSK system. **10**
(b) An amplitude modulated ware form has a form **10**
$Xc(t) = 10\ (1 + 0.6\ Cos2000\pi t + 0.4\ Cos400\pi t)Cos2000\pi t)$
(i) Sketch the amplitude spectrum of Xc(t)
(ii) Find the power content of each spectral component including currier.
(iii) Find total power and sideband power.
(iv) What is modulation index.

3. (a) What is meant by sensitivity of a radio receiver and How it is improved. **10**
(b) Find the mathematical expression of FM signal. **10**

4. (a) State and prove the sampling theorem for low pass and limited signal. Explain aliasing error. **10**
(b) Explain the working of foster seeley discriminator with neat ckt diagram and phcasor diagram. **10**

5. (a) What is meant by sensitivity of a radio receiver and How it is improved. **10**
(b) What are the advantages of QPSK system. **5**
(c) Compare analog and digital communication system. **5**

6. (a) What are advantages and dis-advantages of digital comm^n also draw block diagram of pcm and explain it. **10**
10
(b) Explain the following in relation of radio receiver
(i) Selectivity
(ii) Sengitivity
(iii) Double spotting.

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