S.E. IT Sem III CBGS Nov. B
Sub— PA & DC. 29/11/13

11-11-2013-DTP-P-8-PM-19

Con. 7873 - 13. **GX-12089**

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

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

1. Attempts any **four** the following :- **20**
   (a) What is double spotting ?
   (b) Explain Eye pattern in detail.
   (c) Explain under water acoustic channel.
   (d) Explain low level modulated AM transmitter.
   (e) Compare FDM and TDM.

2. (a) State and prove sampling theorem for low pass band limited signal. **8**
   (b) Explain balanced modulator using FET's. **6**
   (c) In an AM radio receiver the loaded Q of the antenna circuit at the input to the mixer is 100. If the intermediate frequency is 455 KHz, calculate the image frequency and its rejection at 1 Mhz. **6**

3. (a) Explain what is mean by quantization noise. Explain in detail. **8**
   (b) Find the mathematical expression of FM signal. **6**
   (c) Draw block diagram of BPSK generation with waveform. **6**

4. (a) Calculate the Max. bit rate for a channel having BW 3100 Hz and signal to noise ratio 10dB. **4**
   (b) State and prove the following properties of fourier transform **8**
      (i) Time shifting
      (ii) Convolution in time domain
   (c) Explain the term :- **8**
      (i) Shot noise and equivalent noise tempreature
      (ii) Friiss transmission formula

5. (a) Draw and explain PCM-TDM system. **10**
   (b) What are the disadvantages of tuned RF receiver ? Draw the Ckt of a superhetrodyne receiver and explain the same. **10**

[TURN OVER

6. (a) Draw nat block diagram of delta modulator and explain it's working. What are the draw backs of delta modulator ? How are they come by ADM ? **8**

(b) Write short not on :- **12**

(i) Noise triangle.

(ii) Pre-emphesis and de-emphesis.

(iii) White noise.

(iv) Properties of line codes.
