Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

CS-4003 (CBGS)

B.E. IV Semester

Examination, May 2018

Choice Based Grading System (CBGS)

Analog and Digital Communication

Time : Three Hours

Maximum Marks : 70

Note: i) Total number of questions are eight.
ii) Attempt any five questions
iii) All questions carry equal marks.

1. a) Write equations of Fourier transform and inverse Fourier Transform. Write conditions for existence of Fourier Transform. 7

   b) What is Gate function? Find out Fourier Transform of Gate function. 7

2. a) Describe the need of modulation. Comment on Bandwidth and modulation index of AM. 7

   b) Explain synchronous detection technique of AM-SC system and comment on phase and frequency errors. 7

3. a) Prove that the maximum efficiency of AM is 33.33% and that of suppressed carrier systems is 100%. 7

   b) Compare AM, AM-SC and FM systems. 7

4. a) What do you mean by sampling? Write and explain sampling theorem. Differentiate natural and flat top sampling. 7

   b) Write a short note on Aperture effect. 7

5. a) What do you mean by Quantization? Explain Quantization error with suitable example. 7

   b) Write and explain functioning of pulse code modulation system. Comment on its Bandwidth. 7

6. a) 24 telephone channels, each band limited to 3.4 KHz are to be time division multiplexed by using PCM. Calculate the bandwidth of the PCM system for 128 quantization levels and an 8 KHz sampling frequency. 7

   b) Draw and explain Delta modulation system. What are its limitations? How to overcome them? 7

7. a) What are the advantages of digital modulation techniques? Describe BPSK system. 7

   b) Comment on eye patterns, companding bit rate and band rate. 7

8. Write short notes on any two: 14
   a) PAM/PPM/PWM
   b) Convolution
   c) QPSK
   d) DPCM

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