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**CS-4003-CBGS**

**B.E. IV Semester**

Examination, June 2020

**Choice Based Grading System (CBGS)**

**Analog and Digital Communication**

**Time : Three Hours**

**Maximum Marks : 70**

- Note:** i) Attempt any five questions out of eight questions.  
ii) All questions carry equal marks.  
iii) Assume suitable data, if required.
1. a) Draw and explain the periodic impulse of Sine and Cosine wave. Define and explain the Sampling and Sine Function. Derive its expression.  
b) Write and explain the relations for time domain and frequency domain representation for any signal.
  2. a) Explain the use of Base Band Signals. What is the need of Modulation in a System? Explain  
b) Explain Synchronous detection technique. Find the errors in this technique, also give its remedial.
  3. a) Give an introductory note on Modulation techniques.  
b) Write any five differences between Amplitude Modulation and Angle Modulation.
  4. a) What do you mean by low pass and band pass signal? Explain Quantization and quantization error.  
b) Describe Differential PCM. Explain its block diagram. Write its consequences to use with linear signals.

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5. a) Explain Digital Modulation Techniques. What is the difference between ASK and BPSK?  
b) Write down generation, detection, equation and bandwidth of Differential phase shift keying.
6. a) Write down generation, detection, equation and bandwidth of Binary Frequency shift keying.  
b) Discuss the concept of energy density and power in a signals.
7. a) Give a brief introduction on Natural and Flat top sampling.  
b) Write any five differences between offset and non offset QPSK.
8. Write short notes (any four):
  - a) M Ary PSK
  - b) M Ary FSK
  - c) Aperture Effect
  - d) PAM - TDM Signal
  - e) SSB and VSB

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