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

Roll No .....

CS-226

B.E. IV Semester

Examination, June 2017

Choice Based Credit System (CBCS)

Analog and Digital Communication

Time : Three Hours

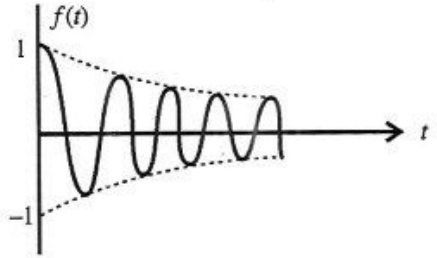
Maximum Marks : 60

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) State and prove Parseval's theorem for energy signal and power signals.

   b) Determine the Fourier transform of the damped sinusoidal waveform of frequency w_0 shown in figure.



2. a) Explain the generation methods of SSB signal.

   b) Explain generation method of AM using square law modulator with a suitable figure.

3. a) What is double-side band suppressed carrier (DSB-SC) modulation? Explain the basic principle of DSB-SC modulation.

   b) What is synchronous detection? Explain phase and frequency errors in synchronous detection of AM-SC signal.

4. a) What do you understand by angle modulation? Explain types of angle modulation and relationship between them.

   b) Explain various types of frequency modulation. Also discuss the spectrum and transmission BW of FM signals.

5. a) State and prove sampling theorem. Also, draw the spectrum of sampled signal.

   b) Calculate the transmission bandwidth in Pulse Amplitude Modulation (PAM) (i.e.) (BW >> fm)

6. a) Explain term "Quantization" and Quantization error.

   b) Draw and explain the circuit of PAM modulator and demodulator.

7. a) What is companding? Explain why companding is needed? Discuss laws of companding.

   b) Draw the block diagram of DPSK transmitter and receiver. Describe the working along with the waveforms showing recovery of binary message.

8. Write short notes on (any three)

   a) Impulse response of a system

   b) VSB transmission

   c) Natural sampling

   d) Aliasing effect

******