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

Roll No ....

EC-227

B.E. IV Semester

Examination, June 2017

Choice Based Credit System (CBCS)

Communication Systems

Time : Three Hours

Maximum Marks : 60

Note : i) Attempt any five questions.

ii) All questions carry equal marks.

iii) Assume any missing data.

1. a) State and prove time shifting property and frequency shifting property of fourier transform.

   b) Find the fourier transforms of the following functions and sketch them

   i) sgn (t)

   ii) rect(t/T)

2. a) What is the concept of convolution? Derive an expression for convolutions of two time function $x_1(t)$ and $x_2(t)$.

   b) Explain generation method of AM using square law modulator with the help of a suitable diagram.

3. a) Explain the synchronous detection method of DSB -SC signals. What is the effect of phase and frequency errors in synchronous detection.

   b) With the help of circuit diagram, explain the working of balanced modulator for DSB-SC generation.

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4. a) Write a short note on "VSB modulation and demodulation".

   b) Explain the function of superheterodyne receiver. Write down its advantages and disadvantages.

5. a) Write short note on AGC? Draw the block diagram of broadcast receiver using AGC.

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

6. a) Explain pre-emphasis and de- emphasis in FM.

   b) Explain various methods of generation of FM.

7. a) Discuss various sources of the noise. What do you understand by the term noise figure?

   b) Write down the effects of noise on AM and FM receivers.

8. Write short notes on (any three)

   a) Noise figure of merit of FM receiver

   b) IF frequency and image signal rejection

   c) PLL detector

   d) Selectivity, Sensitivity and fidelity

   e) PSD

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