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

Roll No .....

EC-4004 (CBGS)

B.E. IV Semester

Examination, May 2018

Choice Based Grading System (CBGS)

Communication Systems

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Determine Fourier transform of impulse function. 7

   b) State and prove the time convolution theorem. 7

2. a) State and prove the time shifting property and frequency shifting property of Fourier transform. 7

   b) Give a comparison between AM, DSB-SC, SSB-SC and VSB-SC. 7

3. a) Give a comparison between Amplitude Modulation and Frequency Modulation. 7

   b) An AM broadcast transmitter radiates 20 kW when the modulation index is 75%. Calculate 7

      i) How much of this carrier power.

      ii) Power of each sidebands.

4. a) What is the need for modulation in communication system? 7

   b) Explain synchronous detection of DSB-SC signal with a neat diagram. 7

5. a) Explain the working principle of super heterodyne receiver. 7

   b) Discuss about the noise in AM. 7

6. a) Explain the generation of narrow band FM with neat diagram. 7

   b) Explain the Pre-emphasis and De-emphasis circuit with a neat diagram. 7

7. a) Draw and explain the block diagram of FM receiver. 7

   b) Define AGC? Explain a simple AGC circuit diagram. 7

8. Write short notes on (any three): 14

   a) Noise figure

   b) Noise temperature

   c) Noise bandwidth

   d) Image signal rejection

   e) IF frequency

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