Roll No .....

EX-6001 (CBGS)

B.E. VI Semester

Examination, May 2019

Choice Based Grading System (CBGS)

Communication Engineering

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) State and prove the following properties of Fourier transform.
   i) Time scaling
   ii) Frequency shifting
   b) Find the Fourier transform of following signals
   i) $sgn\ (t)$
   ii) $\cos\omega_0 t\ u(t)$

2. a) State prove and explain Parseval's theorem for energy and power signals.
   b) Define and differentiate following signals
   i) Deterministic and random
   ii) Periodic and non periodic
   iii) Analog and discrete
   iv) Energy and power signals

3. a) Define modulation and give its need in communication system with justification.
   b) With the help of diagram explain any one method of AM generation.

4. a) Illustrate the relationship between FM and PM with the help of block diagram.
   b) Derive an expression for an FM signal when a carrier A sin ωct is being modulated by a signal Em cosωmt.

5. a) How superheterodyne receiver is an improvement over TRF receiver? Draw the block diagram of superheterodyne receiver and explain its working.
   b) Define and explain AGC, AVC, and AFC.

6. a) Draw the block diagram of PCM transmitter and receiver and explain its working in detail.
   b) Explain frequency shift keying also discuss its generation and detections.

7. a) Draw the block diagram of a satellite system and explain its working.
   b) What is the working of transponder and earth station explain in detail.

8. Write short notes on any two of the following.
   a) Synchronous detection for SSB
   b) Generation of FM signal
   c) Selection of intermediate frequency in superheterodyne receiver
   d) Quantization error
   e) QPSK
   f) Satellite frequency bands and uplink and downlink frequency selection

******