

B.Sc. S.Y. (CBCS Pattern) Sem-IV
USELT07 : Electronics Paper-I (Communication Electronics)

P. Pages : 2

Time : Three Hours



GUG/S/19/12006

Max. Marks : 50

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- Notes : 1. All questions are compulsory and carry equal marks.
2. Draw neat and labelled diagrams wherever necessary.
3. Use of log table/calculator is allowed.

1. Either.

- a) Draw the block diagram of an electronics communication system and explain it. State the advantages of electronics communication system. **8+2**

OR

- b) Draw electromagnetic communication spectrum chart or table. Explain the necessity of band designation in communication system. **6+4**

2. Either.

- a) Define amplitude modulation. Explain it with suitable waveform. Derive the expression for modulation index of amplitude modulation. **2+4+4**

OR

- b) What is frequency modulation? Explain the frequency modulation with suitable waveform. Give the comparison between FM and PM. **2+5+3**

3. Either.

- a) Explain the generation of FM using VCO. Explain the concept of Superheterodyne receiver. **5+5**

OR

- b) State and prove sampling theorem. **10**

4. Either.

- a) State the advantages of digital transmission. Draw the block diagram of pulse code modulation and explain it. **4+6**

OR

- b) Explain the following terms: **5+5**
i) TDMA. ii) FDMA.

5. Attempt **any ten** of the following :

1x10

- a) Define signal to noise (S/N) ratio.
- b) What is TRAI?
- c) What is base band signals?
- d) State any two advantages of modulation.
- e) What is demodulator?
- f) Define phase modulation.
- g) What is channel capacity?
- h) Draw PAM output waveform with respect to input signal as sin wave and switching signal as square wave.
- i) What is FM detector?
- j) State any two advantages of satellite communication.
- k) State full form of GSM and CDMA.
- l) What is GPS system.
