

B.Sc. S.Y. (New CBCS Pattern) Semester - IV  
**USELT07 - Electronics Paper-I (Communication Electronics)**

P. Pages : 2

Time : Three Hours



**GUG/S/23/12006**

Max. Marks : 50

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

**Either:**

1. a) Draw the block diagram and explain each block of communication system. **7+3**  
Define noise and explain signal to noise (S/N) ratio.

**OR**

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

**Either:**

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

**OR**

- b) Explain the frequency modulation with suitable waveform. **6+4**  
State the comparison between FM and PM.

**Either:**

3. a) Explain the generation of FM using VCO. **7+3**  
State and explain sampling theorem.

**OR**

- b) Explain the basic principles PAM. **5+5**  
Explain the modulation and detection technique for PAM?

**Either:**

4. a) Explain digital FSK modulation with suitable diagram. **5+5**  
Draw the block diagram of pulse code modulation and explain it.

**OR**

- b) What is CDMA? How is it differing from TDMA? **2+4**  
Explain the concept of GSM. **+4**

5. Attempt **any ten** of the followings.

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|--|---|
| a) What is communication?                                | 1 |
| b) What is Base band signal?                             | 1 |
| c) State any two types of noises.                        | 1 |
| d) Sate any two advantages of amplitude modulation.      | 1 |
| e) What is demodulator?                                  | 1 |
| f) Define phase modulation.                              | 1 |
| g) What is multiplexing?                                 | 1 |
| h) State any two advantages of Superheterodyne receiver. | 1 |
| i) What is PWM?  | 1 |
| j) Write the concept of ASK.                             | 1 |
| k) State full form of GSM and CDMA.                      | 1 |
| l) What is GPS system?                                   | 1 |

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