Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 02**

Total No. of Questions : 09

**B.Tech. (Electronics Engg.) (OE 2012 Onwards)/
(Electrical & Electronics) (OE 2013 Batch)
(Sem.–6)**

ELEMENTS OF COMMUNICATION SYSTEM
Subject Code : BTEEE-OPB
M.Code : 72839

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. **Answer briefly :**

   a. What is the need of modulation? Explain.

   b. Define sampling theorem.

   c. Differentiate between Fourier Series and Fourier transform.

   d. Discuss the advantages of SSB.

   e. Define the term fidelity.

   f. Compare AM and FM modulation.

   g. What do you mean by transmission channel? Explain.

   h. Differentiate between low level and high level AM transmitters.

   i. What is FSK? Discuss.

   j. What do you mean by image rejection? Explain.

SECTION-B

2. What do you mean by noise? Discuss its different types. Also define noise figure and noise factor.

3. With the help of block diagram explain the working of Armstrong FM transmitter.

4. Draw the block diagram and explain the function of different blocks of super heterodyne receiver.

5. Discuss in detail the different modes of data transmission.

6. Why multiplexing is required? Explain Time division data multiplexing technique.

SECTION-C

7. Discuss PAM, PWM and PPM pulse modulation techniques in detail. Also compare the three.

8. Explain :

   a) Directional capability of data exchange

   b) DSB and SSB transmitters

9. Discuss :

   a) Satellite Communication

   b) Data Compression

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.