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

Total No. of Questions : 09

B.Tech. (Automation & Robotics) (2011 & Onwards)/

B.Tech. (Electronics & Electrical) (2011 onwards)/

B.Tech. (Electronics & Electrical) (2013 Onwards)

(Sem.–5)

COMMUNICATION SYSTEM

Subject Code : BTEEE-501

M.Code : 70481

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

INSTRUCTION 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) Sampling

    b) Noise figure

    c) Synchronous and asynchronous modulation

    d) FM broadcast transmitter

    e) Image rejection

    f) TRF receiver

    g) Hoffman code

    h) Modems

    i) PCM

    j) FSK

SECTION-B

2. Define modulation. Describe various modulation systems.

3. An angle modulated signal with carrier frequency $\omega_c = 2\pi \times 10^5$ is described by the equation

    $$\varphi_{EM}(t) = 10\cos(\omega_c t + 5\sin 3000t + 10\sin 2000\pi t)$$

    a) Find the power of the modulated signal.

    b) Find the frequency deviation.

    c) Calculate the deviation ratio.

4. Explain the directional capability of data exchange.

5. Describe low level and high level AM transmitter with the help of suitable diagrams.

6. Explain the principle and working of super heterodyne receiver.

SECTION-C

7. What do you mean by multiplexing? Describe various data multiplexing techniques in detail.

8. Write a note on SSB transmitter and receiver.

9. Explain various elements of communication systems in detail.

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.