

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech. (ECE) (Sem.-5)**  
**ANALOG COMMUNICATION SYSTEMS**  
**Subject Code : EC-301**  
**M.Code : 57519**

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. Write briefly :**

- a. What is the need of modulation?
- b. Explain the difference between AM and FM using their modulated output.
- c. What is the difference between phase and frequency modulation?
- d. Explain the significance of sensitivity of a receiver.
- e. Explain the need of mixer stage in AM receiver.
- f. What is the function of phase locked loop circuit in AM receiver?
- g. What is need of VSB modulation?
- h. What is the advantage of Ratio detector?
- i. What is heterodyne process in AM receiver?
- j. What is flat top sampling in PAM?

### SECTION-B

2. How much power is saved due to carrier suppression in AM? Explain it with required expressions.
3. Draw and explain nonlinear AM modulator.
4. Explain AM detector with AGC using a neat block diagram.
5. Explain the quadrature FM demodulator with a neat block diagram.
6. Draw and explain single sideband envelop detection receiver.

### SECTION-C

7. Draw and explain the operation of Foster Seeley discriminator with neat diagram.
8. Explain the pulse position modulation (PPM) demodulator with neat diagram.
9. Write short notes on following :
  - (a) Pulse width Modulation
  - (b) Self excited additive mixers

**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.**