



## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

"T1 Examination, February-2019"

Semester: IV

Subject: WIRELESS COMMUNICATION

Branch: CSE

Course Type: Core

Time: 90 Minutes

Program: B.Tech

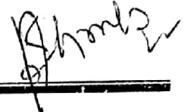
Date of Exam: 08/02/19

Subject Code: ECH434 B-T

Session: II

Course Nature: Hard

Max. Marks: 30

Signature: HOD/Associate HOD: 

Note: Part A: All questions are compulsory. Each Question carries 2 marks.

Part B: Attempt any two questions. Each Question carries 10 marks.

### PART A

Q1.

- a) State the need of modulation.
- b) Sketch the AM modulated waveform for modulation index  $m=1$  &  $m=0.5$  having carrier signal  $10\sin 500t$ .
- c) When a 50.4 MHz carrier is frequency modulated by a sinusoidal AF modulating signal the highest frequency reached is 50.405 MHz. Calculate its frequency deviation produced and carrier swing of the wave.
- d) Consider the signal 10101101. Sketch its ASK and PSK waveforms.
- e) Compare PAM PWM and PPM. Specify atleast 4 points

### PART B

Q2.

- a. Explain PCM in detail (6)
- b. Find the carrier and modulating frequencies, modulation index and maximum deviation for the FM wave represented by  $V=12 \sin (6 \times 10^8 t + 5 \sin 1250t)$ . Evaluate the amount of power this FM wave dissipates in  $10\Omega$  resistor. (4)

Q3.

- a. With a neat block diagram assess how digital communication takes place (5)
- b. Define signal to noise ratio and state its importance. (2)
- c. Discuss about noise and state its types. (3)

Q4.

- a. Derive the various power relations for an Amplitude modulated wave (5)
- b. Discuss how pulse position gets modulated when a sinusoidal message signal is given (5)

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