



MANAV RACHNA
vidyaparakasham

MANAV RACHNA
UNIVERSITY

FORMERLY MANAV RACHNA COLLEGE OF ENGINEERING
NAAC ACCREDITED A GRADE INSTITUTION

Declared as State Private University under section 21 of the UGC act, 1956

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 $V=12 \sin (6 \times 10^8 + 5 \sin 1250t)$. Evaluate the amount of power this FM wave dissipates in 10Ω 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)
