

# **13EC2204-PULSE & ANALOG CIRCUITS**

(Common for EEE & ECE)

Lectures/Week: 4Hrs.  
Univ.Exam.Duration: 3Hrs

Credits: 4  
Sessional Marks: 40  
Univ.Exam.Marks: 60

## **UNIT-I**

**WAVE SHAPING CIRCUITS:** Types of waveforms, RC low pass and high pass circuits, rise time, tilt, Diode as a switch, Diode clipper and clamper circuits.

## **UNIT-II**

**MULTIVIBRATORS:** BJT switch and switching times, Bistable & triggering methods, Schmitt-trigger, Mono-stable and Astable multi-vibrators using BJT.

## **UNIT-III**

**TIME BASE CIRCUITS:** RC sweep circuits, constant current Miller and Bootstrap time base generators using BJT's, UJT relaxation oscillators, and sampling gates.

## **UNIT-IV**

**MOS TRANSISTOR:** MOS and CMOS Structure, operation (enhancement and depletion mode), I/V Characteristics, Second Order effects - MOS Device capacitance and Small signal model.

## **UNIT-V**

**POWER AMPLIFIERS:** Class-A, Transformer coupled Class-A, Class-B Push-pull, Complementary Class-B push-pull amplifiers.

**TUNED AMPLIFIERS:** Introduction, Q-factor, small signal tuned amplifiers, effect of cascading single tuned amplifier on bandwidth and stagger tuned amplifiers.

### **TEXT BOOKS:**

1. Milliman & Taub "Pulse & Digital switching waveforms", McGraw-Hill.
2. Pulse and Digital circuits by A.Anand Kumar, 2005, PHI.
3. Design of analog CMOS Integrated circuits by Behadrazhavi.
4. Millman and Halkias, "Integrated Electronics", McGraw- Hill Co.
5. Electronic Circuit analysis by A.P Godse & Bakshi

### **REFERENCE BOOKS:**

1. David A. Bell, Solid state pulse circuits, PHI.
2. Electronic devices and circuits by Boylestad, Louis Nashelsky, 9ed., 2008PE