

# AMEE06 ANALOG & DIGITAL ELECTRONICS

## ANALOG ELECTRONICS

### UNIT-1 SPECIAL DIODES

- 1.1 LED, Reactor diode,
- 1.2 Photo diode, Schottky diode,
- 1.3 Tunnel diode; their characteristics and applications.
- 1.4 Transistors as a switch.

### UNIT-2 FREQUENCY RESPONSE

- 2.1 Amplifier transfer function,
- 2.2 Low and high frequency response of common emitter and common source amplifiers.
- 2.3 Feedback: General feedback structure;
- 2.4 Properties of negative feedback;
- 2.5 Series-series, series-shunt, shunt-series and shunt-shunt feedback amplifiers.

### UNIT-3 BASIC PRINCIPLE OF SINUSOIDAL OSCILLATOR,

- 3.1 R-C Phase Shift and Wein Bridge oscillators, tuned oscillators
- 3.2 Collpits and Hartley; Crystal oscillator

## DIGITAL ELECTRONICS

### UNIT-4 COMBINATIONAL LOGIC CIRCUITS

- 4.1 Multiplexers/Demultiplexures, Encoders/Decoders.
- 4.2 Sequential Logic Circuits: latches, flip-flops- S-R, T, D, J- K.
- 4.3 Shift Registers: Basic principle, serial and parallel data transfer,
- 4.4 Shift left/right registers, universal shift register.
- 4.5 Counters: Mode N Counters, ripple counters,
- 4.6 Synchronous counters, ring/Johnson counters.

### UNIT-5 OP- AMP APPLICATIONS

- 5.1 As table, Monostable and Bistable multi-vibrators,
- 5.2 Schmitt trigger, IC-555 Timer, A/D and D/A converters.
- 5.3 Voltage Regulators: Series, shunt and switching regulators,
- 5.4 Op-amp based configurations.
- 5.5 Memories: Introduction to ROM, RAM;
- 5.6 Sequential Memory, Memory organization.

### Reference Books:

1. Taub & Schilling “Digital Electronics”- Tata McGraw Hill
2. Anil K. Maini, “Digital Electronics: Principles and Integrated circuits” Wiley India Ltd, 2008.
3. Millman, J. and Grabel A, “Microelectronics” McGraw Hill
4. Anand Kumar, “Switching Theory and Logic Design” Prentice Hall of India, 2008.