

3RD INTERNALS SYLLABI

3110016 Basic Electronics

2. Bipolar junction transistors and its biasing

Thermal stability, biasing BJT switching circuits, transistor power dissipation and switching time, Testing of bipolar junction transistor with multi-meter, Reading datasheet of BJT.

3. Special purpose diodes and transistors

Photo diode, Solar cell, PIN diode, Varactor, Schottky diode, Varistors, Tunnel diode, Photo transistor, Opto-coupler, Reading datasheet of optoelectronics devices.

4. Field effect transistors (FET) and its biasing Junction

field effect transistors(JFET), Comparison of BJT and FET, JFET characteristics, FET, Biasing in ohmic region and active region, Transconductance, amplification and switching

6. Digital Circuits

Basic gates AND, OR, NOT, NAND, NOR, EX-OR, EX-NOR.

3110018 Physics

2. Semiconductors

- Intrinsic and extrinsic semiconductors
- Dependence of Fermi level on carrier-concentration and temperature (equilibrium carrier statistics)
- Carrier generation and recombination, Carrier transport: diffusion and drift, p-n junction,
- Metal-semiconductor junction (Ohmic and Schottky), Semiconductor materials of interest for optoelectronic devices

3110014 Mathematics – 1

4. Multiple Integrals

- Double Integrals as volumes
- Change of order of integration
- Double Integration in polar coordinates
- Change of Variables
- Area by Double Integration

- Triple Integral
- Volume as Triple Integral (Cylindrical and Spherical Coordinates)
- Indeterminate Forms

3110005 Basic Electrical Engineering

2. DC Circuits

Complex Algebra Operations, R-L Series Circuit, R-C Series Circuit, Power Triangle, Impedance Triangle, R-L-C Series Circuit, R-L-C Resonance

3. Transformers

Magnetic Materials, BH Characteristics, Construction and working principle of single phase and three phase transformers

3110013 Engineering Graphics & Design

1. Loci of Points
2. Projections of Planes
3. Orthographic Projections
4. Isometric Projections