

DETAILED SYLLABUS OF ANALOG ELECTRONICS FUNDAMENTAL OF ELECTRONICS

INTRODUCTION

Concept of Electronics, Energy, Material, Force, Atomic Structure, Voltage, Current, Ohm's Law, Voltage Drop, Direction of Current, Polarity of Voltage Drop, Power, Soldering and Desoldering, Practical and Troubleshooting Testing.

PASSIVE COMPONENTS

Resistance, Capacitors, Magnet, Coil, Inductance, Transformer, Eddy Currents, Characteristics with Frequency and Voltage, Practical and Troubleshooting, Testing.

SEMICONDUCTOR

Definition, Intrinsic and Extrinsic, Doping, Concept of Holes and Electrons, Current in semiconductors, Structure of semiconductors, P-type, N-type Materials, Diode, Identification of Anode and Cathode, Types of Diode, Meter Checking of Diode, Rectifier Circuits, Zener Diode as Regulator, Transistor and its Working, Meter Checking of Transistor, Amplification, Gain, FET, MOSFET, CMOS, H MOS, Oscillators, Transducers, Integrated Circuits, IC Packaging Techniques, Projects and Troubleshooting.

OPERATIONAL-AMPLIFIER

Op-amp study, Configurations and Practical.

STUDY OF POWER ELECTRONICS DEVICES

POWER ELECTRONICS DEVICES

SCR, DIAC, TRIAC, UJT, Characteristics, Regulator Circuits SCR Turn On and Turn Off processes.

DC-MOTOR STUDY

Working of DC Motor, Principle, Design Theory, Application in Hardware.

INTRODUCTION TO COMMUNICATION ENGINEERING

COMMUNICATIONS BASIC FUNDAMENTALS

Communication, Modulation, AM, FM, Demodulation.

CIRCUIT STUDY AND ANALYSIS

Resistive Circuit and Laws, R-L, R-C, R-L-C Circuits and their use, Impedance, Impedance Matching and Significance, KVL, KCL, Practical and Applications, Testing.

CELL AND BATTERIES

Definition, Ideal Cell Battery, Response of Cell and Battery, Types, Application and Practical.

RELAYS AND SWITCHES

Definitions, Physical Construction, Types, Working and Application, Current Rating and Advance Applications, Classification of Relays, Introduction to Switches, Types of Switches, Applications of Switches, Practical.

FUSES

Definitions, Types, Fusing Factor, Applications, Practical.

TESTING AND MEASURING EQUIPMENTS

ELECTRONIC EQUIPMENTS

Analog Multimeter, Digital Multimeter, Analog Ammeter, CRO's Function, Tools and their Applications and Study. Other Testing and Measurement Equipments.

PROJECT

Basic Level Project, Amplifier Circuits, Door Bell etc.

CASE STUDY

Discussion on Field Level Problems, Group Discussion.