Syllabus

Section Engineer

Mechanical - Engineering Mechanics, Strength of Materials, Theory of Machines, Design for static and dynamic loading, Fluid Mechanics, Heat Transfer, Thermodynamics, Power Engineering, Steam Tables, Rankine, I.C. Engines: air-standard Otto, Diesel cycles, Metal Casting, Machining and Machine Tool Operations, Metrology and Inspection. Refrigeration, psychometric chart , Material property.

Electrical - Basics of Circuits and Measurement Systems, Electric Circuits and Fields, Signals and Systems, Electrical Machines, Transformers, Power Systems, Control Systems, Electrical and Electronic Measurements, Analog and Digital Electronics, Power Electronics and Drives.

Electronics - Electronic Devices: Energy bands in silicon, intrinsic and extrinsic silicon. p-n junction, Zener diode, tunnel diode, BJT, JFET, MOS, MOSFET, LED and avalanche photo diode, Analog Circuits, Digital Circuits, Signal & Systems , Control System & Communication Basics. Antennas, Arrays, Electro Magnetic Field Theory (EMFT) and its basics. Data Communication Basics, Concepts related with TCP/IP, switches, Routers , Fiber optic communication, Satellite Communication, Wireless Communication, mobile switches and systems. Basics of Electrical and Electronic Circuits, Basics of Electromagnetics, Basic electrical measuring instruments.

Civil - Strength of Materials, Structural Analysis, Concrete technology of Structures, Steel Structures, Soil Mechanics, Hydrology, Foundation of Bridges, Railway Engineering Survey Engineering. Theodolite traversing, plane table surveying, curves, Environmental Engineering, Estimating, Costing and Valuation & Building Materials, Pre-stressed Concrete technology.

Junior Engineer

Mechanical - Strength of materials, Fluid Mechanics, CADD CAM, CIM, Measurements, Robotics, Mechanics of Machines, Manufacturing Process, Thermodynamics, materials, Automobiles , refrigeration & air conditioning.

Electrical - Electrical Machines, Basics of Electrical, Electronics, Power Electronics, circuits and measurements, power system, control system. Network Theorems, DC & AC generators, DC & AC motors, Transformers. Basics of Electro Magnetic Circuits._

Electronics- Semiconductor Physics, Small Signal amplifiers at low frequency, Network Theorems and Elements, Electronic Instruments for Measuring Basic Parameters, Digital Signal Processing, Control System, Instrumentation Techniques, Digital Electronics, Analogue Electronic Circuit, Mobile Communication System, Satellite Communication System, Optical Fiber Communication. Basics of Data Communication, RF Basics wireless communication.

Civil- Strength of Materials and Mechanics of Structures, Building Material & Construction, Hydraulics, Design of RCC structures, Design of steel structures, Estimation and costing, Surveying, Soil Mechanics, Foundation Engineering Basic Highway Engineering, Concrete technology, Environmental Engineering.

Maintainer

Fitter - Machines, Machine accessories, Workshop Practice, Workshop Calculation, Measuring Tools/Hand Tools/Cutting Tools, Power transmission, Limits and Fits, Lubricants, fasteners and fastening methods, heat treatment, Safety Precautions, Engineering Drawing.

Electrical - Measuring & Testing Instruments, Electrical Hand Tools, various safety measures involved in industry, Fundamentals of Electricity, Cells and batteries, DC machines, AC machines, Transformer, Earthing, Overhead Transmission, Introduction to Basic Electronics, Electrical Wiring and Wiring systems, House wiring, Circuit Signs and Symbols, Workshop calculation, Conductors and Insulators.

Electronics- Basic Electronic Components, Component testing, Measuring & Testing equipment, Diodes, Field Effect Transistor, Thyristors, Amplifiers, Oscillators, Basic Logic Gates, Number System, Motors and Generators, Circuit Signs and Symbols, Basic knowledge of communication system and computer architecture.

Civil-

- Have knowledge to prevent the structure with DPC. Draw different floors, various types of arches and lintels, different types of door and windows including knowledge of carpentry joints, different types of roof with all details with general principals of constructions.
- Draw and design staircases. Draw plan, section, and elevation of residential buildings (dingle and double) with help of sketches, and line diagrams following principle of planning.

- Plotting of longitudinal and cross section of a road from given reduced levels, calculation of earth work and other materials of road, plotting of blocks and drawing of contour maps from given data. Preparing/ drawing details of types of road, C.S. of railway tracks, culverts and bridges.