

SYLLABUS FOR PLUMBER

- ❖ Importance of safety and general precautions required for the trade. Importance of the trade. Types of work to be done by trainees in the institute. Scope of a plumbing work. Types of services have to plan. Basic Bench fitting.
- ❖ Fitter's common hand tools - names, description and Material from which they are made. Description, types and uses of holding device , hammers & cold chisels, cutting tools Description of simple fitting operations hack sawing, punching and filing. Types of files used commonly. Marking instruments and their use. Description of different types of Locking and fastening devices.
- ❖ Standard pipe threads. Description of simple drilling machine. Method of using drills taps and dies. Description of simple bench drilling Machine.
- ❖ Description and uses of Carpenter's hand tools used for simple operations such as marking, sawing, planning and making simple joints. Common types of wood- their description and use.
- ❖ Gas & Arc welding : Purpose of gas and Arc welding Method of gas & arc welding, Equipments and tools for hot gas welding. Safety precautions to be observed Methods of soldering and brazing - & Types of fluxes uses Description of Plumber's materials Lead, tin, Zinc, solder, copper, red lead etc. and their uses. Hard & soft solders -their properties, composition and uses.
- ❖ Masons hand tools: Identify plumbing services required for each type of building according to usage. Description of plumber tools and Equipments-ratchet, brace, threading die, pipe wrench, sliding wrench, spanner set, chain Wrench etc. and their safety. Care & use of tools
- ❖ Names, description and their uses. -Method of making holes in walls and Floors. Types of tools used and various Processes. Concept of bricks, lime and cement. Preparation of mortars with various materials of varying composition. Common brick joints. Description of bonds Scaffolding & plastering. Method of construction of manhole etc. Plain cement concrete, RCC and its proportion, grades of coarse aggregate and fine aggregate, Define-concrete with cement mortar and lime mortar. Knowledge of waterproofing compound
- ❖ Different types of pipes- GI, C.I, PVC/CPVC, PPR, AC and HDPE etc. Describe the pipe fittings GI, C.I, PVC/CPVC, PPR, AC and HDPE etc. Methods of joining and their uses. Precautions to be taken while fixing.
- ❖ Importance of Layout in domestic. Plumbing Symbols and coding practice. Describe the pipe dies, their uses, care and precaution. P.V.C. Description, Properties & use in plumbing work ,PVC Pipe fitting -bends, elbows, sockets, tees, unions etc. Their description, specification and use Metric specification of various pipes. Standard pipe threads. Method of Joining and fixing PVC pipe. Joining material for water and gas piping system Electric hot plate for PPR pipe joints
- ❖ Description, identify the parts of pumps types, and their uses (Centrifugal pump) reciprocating, submersible pumps, etc.) Application -care & maintenance of pumps

- ❖ Describe water meter -types, working principle-application, merit, specification. Laying of Branches of piping system Inspection and testing of water supply system. General points to be observed when choosing water supply system. Description of cocks & valves-their types, Application, working principle, materials & advantages, specification as per IS
- ❖ Sources of water Composition of water: Hard & Soft water, temporary hardness & permanent hardness. Action of water on lead-water softness -tests for water. Water purification stages and methods Impurities of water - organic and inorganic impurities Static water pressures and measurement of pressures. Bursting pressure, Expansion of water on freezing and heating Bernoulli's principles Pascal's law Pressure of water on the sides of cistern or tank. Water hammer in pipes.
- ❖ Description of sanitary fittings (bath tub, floor traps , kitchen sink , wash basin etc.
- ❖ Trouble shooting of sanitary system Testing of drainage lines smoke test, water test, smell test, ball test, mirror test.
- ❖ Erecting rain water and drainage pipe system, Description of sanitary fittings, types application, specification of water closets & urinals General points to be observed when selection of sanitary fittings
- ❖ Methods of tracing out the leakages in water supply system (hydraulic gradient lines, sounding rod, Direct observation etc) Leaks in pipes and noises in plumbing.
- ❖ Causes and remedies of Air locks in pipe and pipe fittings
- ❖ Use of hummed and asbestos pipes of different sizes. Method of laying out pipes alignment and joining.
- ❖ Inspection chamber and septic tank, Layout of drainage system , types application, specification ,IS Code
- ❖ Description of drains, chess pools, soaks pits etc. Traps-types and their uses ,applications, specification , IS Code
- ❖ Describe the soil pipe, types, materials, Fittings, joints, specification, Application, Testing. Uses of Air vent, etc
- ❖ Describe the Rain water harvesting system, types, methods, application, Care and maintenance.
- ❖ Describe rain water gutter, outlet and grounding pipe, Accessories Care and maintenance.
- ❖ Method of dismantling and renewal of the taps and valves Spares for particular work. Describe, types, parts and function, constructional features of flushing tank. Plumbing symbols and plumbing colour codes. Corrosion - causes and remedies, Prevention, Corrosion due to electrolytic action.
- ❖ Concept of heat and temperature. Method of transmission of heat. Heating system by different thermal units. Description of Domestic solar water heater and cooker General layout, specification of materials required for Domestic boilers and Geysers.

- ❖ Preventive maintenance of all types of pumps. Calculation of head of pumps.
- ❖ Suction limitation of pumps , defects in pumping, causes and remedies of pumping
- ❖ Precautions to be taken before entering the tanks and sumps.
- ❖ Causes and remedies of blockages. Sensor system for urinals and was basin, describe, types, specifications and materials required for the sensor system.
- ❖ Describe pressure test, equipments, types, method, calculation of pressure, application.
- ❖ Trouble shooting of leakage testing of sanitary systems.
- ❖ Describe, types, functioning, Specification, of Fire main systems, Hydrants & Sprinklers.
- ❖ Bill of Quantity and Estimation : •Preparation of bill of quantity •Preparation of Estimation

Disclaimer : The above syllabus is broadly indicative but not exhaustive
