

PLUMBER

PAPER- II MARKS - 100

Unit I: Theory (20 marks)

Method of laying out pipes, alignment and joining. Description of various pipe joints, Description of Plumber's materials, Description and types of pumps. Description of pipe dies, their uses, care and precaution, Bending machine and method of bending. Method of bending pipes by hot and cold process, Air lock in pipes and its removal.

Description of cocks & valves-their types, materials, inspection and testing of water supply system.

Type of joints used for different materials, Method of bending Galvanized pipe

Domestic drainage system: Concept of heat and temperature, General layout, specification of materials required and connection of pipes to mains, Sensor system for urinals and wash basin.

Unit II: Masons Hand Tools (20 marks)

Fitter's hand tools, Types of files, pipes, Description of Carpenter's hand tools

Gas welding, Mason hand 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,

Knowledge of waterproofing compound; 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, Plumbing Symbols. Care & use of tools.

Unit III: Pipes and Pipe Fittings (30 marks)

Different kinds of pipe and Pipe fitting and their description, specification and use.

Composition of water; tests for water; static water pressures and measurement of pressures.

Bursting pressure; Expansion of water on freezing and heating.

Equipments and tools for hot gas welding and electric hot plate for PPR pipe joints

Types of fittings for different joints & different pipes.

Description of pipe fittings; Methods of joining and their uses; Precautions to be taken while fixing.

Water purification stages and methods.

Different kinds of joints in joining pipes- GI,PVC/CPVCand HDPE etc.

- Use of hummed and asbestos pipes of different sizes.
- Method of laying out pipes alignment and joining.
- Description of various pipe joints- straight, Branch , Taft and blow, Expansion joints.
Solders and fluxes used in joints.
- Description of Plumber's materials Lead, tin, Zinc, solder, copper, red leadetc. and their uses.
- Water supply system of a small town.

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- Description and types of pumps, viz., suction pump, Centrifugal pump, etc., Contamination of water in a well.
- Description of pipe dies, their uses, care and precaution.
- Metric specification of various pipes.
- Standard pipe threads.
- Method employed for bending, Joining and fixing PVC pipe.
- Joining material for water
- Inspection chamber, septic tank, description of drains, cess pools, soak pits etc.
- Types of traps layout of drainage system
- Method of bending pipes by hot and cold process.
- Method of testing drainage lines
- Method of dismantling and renewal of the valves and pipes. Leaks in pipes and noises in plumbing.
- Installation of water meters. Air lock in pipes and its removal.
- Description of cocks & valves-their types, materials & advantages for particular work
- Type of joints used for different materials such as zinc, lead, copper, etc.
- Method of bending galvanized and other heavy pipes.
- Fire hydrants

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Unit IV: Domestic Drainage System

(30 marks)

- General layout, one pipe system, specifications of materials required.
- Method of testing leakage. Different types of traps, ventilation, anti syphonage and sinks.
- Domestic hot and cold water.
- General layout and specification of materials required
- Connection of pipes to mains.
- Tracing leakage.
- Repairs to service main.
- Domestic boilers and Geysers.
- Method of ventilating pipe.
- Fixing of solar water system.
- Plumbing symbols and plumbing codes for all tools and materials
- Corrosion - causes and remedies, prevention.
- Corrosion due to electrolytic action.
- Effect of water and frost on materials.

Layout of pipes as per drawing

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