Class-III GAS MECHANIC post with eligibility of **Diploma Mechanical Engineering / ITI –Mechanic trade**, **Part-B** of the syllabus (suggestive) for testing **core subject knowledge, practical understanding, basic competency and Safety** expected at the Diploma/ITI level.

Part-B: Subject Knowledge & Application – Gas Mechanic

1. Basic Mechanical Engineering

- Engineering materials and their properties
- Basic workshop practices (fitting, welding, machining)
- Measurement tools (Vernier caliper, micrometer)
- Engineering drawing basics

2. Gas Fundamentals

- Types of gases (LPG, CNG, PNG, industrial gases)
- Properties of gases (pressure, temperature, volume relationships)
- Gas laws (Boyle's law, Charles's law – basic understanding)
- Idea Gas
- Combustion principles

3. Gas Distribution Systems

- Components of gas pipelines (pipes, valves, regulators)
- Gas storage systems (cylinders, tanks)
- Domestic and industrial gas supply systems
- Piping layout and installation basics

4. Tools & Equipment Handling

- Hand tools and power tools used in gas work
- Pipe cutting, threading, bending tools
- Leak detection equipment
- Maintenance tools

5. **Basic Thermodynamics & Thermal Engineering**

- Heat and temperature concepts
- Thermodynamics Law
- Energy transfer basics
- thermodynamic cycles
- Concept, Classification, applications of steam boilers
- Working of Various types of steam boilers
- Concept, classification and Terminology of IC engine
- Concept, classification and Terminology of Compressor

6. **Installation & Maintenance**

- Installation of gas pipelines and appliances
- Preventive and corrective maintenance
- Troubleshooting common gas system faults
- Testing and commissioning procedures

7. **Safety & Regulations**

- Gas safety standards and precautions
- Handling of flammable gases
- Fire safety and emergency response
- Use of PPE (Personal Protective Equipment)
