

Theoretical Knowledge requirement for MMAW:

1. Safety & Hazards
2. “Four Essentials” of Arc Welding
3. Quality Welding Criteria
4. Knowledge of basic welding terms and definitions.
5. Principle of gas welding and cutting.
6. Principles of MMAW process.
7. Knowledge of basics of weld joint fit-up.
8. Knowledge of tack welding.
9. Knowledge of welding parameters for different plate thickness and electrode size.
10. Should be conversant with A.C. and D.C. welding machine.
11. Knowledge of general weld defects.

Theoretical knowledge requirements for GTAW Standard

1. Knowledge of basic principles of GTAW process and relative advantages and disadvantages of this process and application.
2. Knowledge of basics of power source and other equipment for GTAW process.
3. Know why high frequency device are used in GTAW process?
4. Knowledge of electrodes being used in GTAW process, their preparation and applications.
5. Knowledge of handling of Argon Cylinders – fitting of regulators and setting of flow rates.
6. Knowledge of edge preparation in pipe and setting of pipe.
7. Knowledge of joint preparation for different joints.
8. Knowledge of tacking and setting of pipes and use of different techniques in pipe welding by GTAW process.
9. Knowledge of welding parameters for different pipe sizes and thickness on Carbon Steel.
10. Knowledge of different GTAW wires for C.S. and S.S.
11. Knowledge of potential hazards in GTAW process and how to avoid it.
12. Knowledge of welding parameters for different plate thickness and joints in S.S.

13. Basic knowledge of C.S and S.S materials.
14. Knowledge of weld defects in GTAW process.
15. Knowledge of safety precautions used in GTAW process.
16. Knowledge of weld cleaning tech

Theoretical knowledge requirements for GMAW Standard

1. Knowledge of basic principles of GMAW process.
2. Knowledge of modes of metal transfer and their application.
3. Knowledge of welding parameters used for different sheet / plate thickness.
4. Knowledge of techniques of welding of different joints by GMAW process.
5. Knowledge of basics of the power sources used in GMAW process.
6. Knowledge of welding torch, wire feed unit etc. their adjustment and maintenance.
7. Knowledge of current control in GMAW process.
8. Knowledge of CO₂ gas being used and its properties.
9. Knowledge of selection of different type and diameter of wire electrodes being used in GMAW process.
10. Knowledge of relative advantages and disadvantages of GMAW process.
11. Knowledge of potential hazards of GMAW process and parameters.
12. Shielding gas for stainless steel.