

**DETAILED SYLLABUS FOR THE POST OF TRADESMAN – SHEET
METAL IN TECHNICAL EDUCATION (Cat. No.: 767/2021)**

Module : 1 (Marks : 6)

Topic: Metallurgy

| Sl.No. | Lessons |
|--------|--|
| 1 | Physical and Mechanical properties of metals |
| 2 | Ferrous and Non- Ferrous metals |
| 3 | Cast Iron |
| 4 | Plain Carbon Steels |
| 5 | Alloy Steels |
| 6 | Non- Ferrous Alloy Metals |
| 7 | Melting Points & Specific Gravity |

Module : 2 (Marks: 6)

Topic: Specification of Metal Sections (A) Making Process (B)

| Sl.No. | A | Lessons | B |
|--------|-------------------------|---------|--------------|
| 1 | Sheet / Plate | 1 | Hot Rolling |
| 2 | Flat bar | 2 | Cold Rolling |
| 3 | Angles | | |
| 4 | Channels | | |
| 5 | Various hollow sections | | |
| 6 | Solid sections | | |

Module: 3 (Marks:12)

Topic: Measuring and Marking Tools

| Sl.No. | Lessons |
|--------|--------------------------|
| 1 | Steel rule |
| 2 | Try square |
| 3 | L square |
| 4 | Bevel protractor |
| 5 | Calipers |
| 6 | Straight edge |
| 7 | Scriber |
| 8 | Dividers |
| 9 | Trammels |
| 10 | Marking Punches |
| 11 | Micrometer |
| 12 | Vernier Caliper |
| 13 | Vernier Bevel Protractor |

| | |
|----|----------------------|
| 14 | Vernier Height Gauge |
| 15 | Standard Wire Gauge |
| 16 | Screw Pitch Gauge |
| 17 | Radius Gauge |

Module: 4 (Marks:12)

Topic: Cutting and Forming Tools

| Sl.No. | Lessons |
|---------------|---|
| 1 | Snips and Shears |
| 2 | Bench Shears |
| 3 | Hack Saw |
| 4 | Chisels |
| 5 | Files |
| 6 | Cutting Punches |
| 7 | Drill Bits |
| 8 | Thread Forming Tools (Internal and External) |
| 9 | Hammers and Mallets |
| 10 | Sheet Metal Hammers |
| 11 | Stakes and Other Supporting Tools |
| 12 | Screw Drivers |
| 13 | Spanners |
| 14 | Vice and Clamps |

Module: 5 (Marks:8)

Topic: Sheet Metal Seams (A) Stiffening Process (B)

| Sl.No. | Lessons | |
|---------------|---------------------|---------------------------|
| | A | B |
| 1 | Groovede Seam | 1 Edge wiring and Hemming |
| 2 | Locked Grooved Seam | 2 Swaging and Beading |
| 3 | Paned Down Seam | 3 Flanging and Curling |
| 4 | Knocked up Seam | |
| 5 | Capstrip Seam | |
| 6 | Pittsburgh Seam | |
| 7 | Dovetail Seam | |
| 8 | Snap lock Seam | |
| 9 | Butt Joint | |
| 10 | Lap Joint | |
| 11 | Sunk Lap Joint | |
| 12 | Stake Joint | |

Module: 6 (Marks:20)

Topic: Various Cutting and Forming Process (A) Surface Developments (B)

| Sl.No | Lessons | |
|-------|-------------|-----------------------------------|
| | A | B |
| 1 | Notching | 1 Geometrical Construction Method |
| 2 | Blanking | 2 Parallel Line Method |
| 3 | Piercing | 3 Radial Line Method |
| 4 | Punching | 4 Triangulation Method |
| 5 | Shearing | |
| 6 | Perforating | |
| 7 | Sliting | |
| 8 | Lancing | |
| 9 | Nibbling | |
| 10 | Trimming | |
| 11 | Parting | |
| 12 | Bending | |
| 13 | Folding | |
| 14 | Drawing | |
| 15 | Embossing | |
| 16 | Planishing | |
| 17 | Hollowing | |
| 18 | Raising | |
| 19 | Spinning | |
| 20 | Creasing | |
| 21 | Grooving | |

Module: 7 (Marks:12)

Topic: Machines & Equipments For Sheet Metal Fabrication Process

| Sl.No. | Lessons |
|--------|--|
| 1 | Drilling Machine |
| 2 | Shearing Machine |
| 3 | Press Brakes |
| 4 | Bar Folders |
| 5 | Circular Shears |
| 6 | Roll Forming Machines |
| 7 | Seam Closing Machines |
| 8 | Fly Press |
| 9 | Power Press |
| 10 | Polishing & Buffing Machines |
| 11 | Grinder |
| 12 | Air Compressor & Spray Painting Equipments |
| 13 | Pipe Bending Machines & Equipments |
| 14 | Heating & Forging Equipments |
| 15 | Jigs & Fixtures |

Module: 8 (Marks:12)

Topic: Various Joining Process (A) Advanced Cutting Process (B)

| Sl.No. | Lessons | | |
|--------|-----------------------------------|---|------------------|
| | A | | B |
| 1 | Riveting | 1 | WaterJet Cutting |
| 2 | Soldering | 2 | Plasma Cutting |
| 3 | Brazing | 3 | LASER Cutting |
| 4 | Gas Welding & Gas Cutting | | |
| 5 | Shielded Metal Arc Welding (MMAW) | | |
| 6 | Metal InertGas Welding (GMAW) | | |
| 7 | Tungsten InertGas Welding (GTAW) | | |
| 8 | Resistance Welding | | |

Module: 9 (Marks:6)

Topic: Surface Preparation , Surface Protection (A) Aluminium Fabrication (B)

| Sl.No. | Lessons | | |
|--------|--------------------------|---|-------------------------------|
| | A | | B |
| 1 | Degreasing | 1 | Aluminium Fabrication |
| 2 | Pickling | 2 | Various Aluminium Sections |
| 3 | Flame Descaling | 3 | Tools & Equipments |
| 4 | Temporary Treatment | 4 | Screws,Bolts & Nuts , Threads |
| 5 | Semi Permanent Treatment | | |
| 6 | Permanent Treatment | | |

Module: 10 (Marks:6)

Topic: Manufacturing ,Repairing (A) Material Calculation (B)

| Sl.No. | Lessons | | |
|--------|----------------------------------|---|--------------|
| | A | | B |
| 1 | Roof Structures | 1 | Mensuration |
| 2 | House hold & Kitchen Accessories | 2 | Trigonometry |
| 3 | Aircondition Equipments | | |
| 4 | Shipping Industry | | |
| 5 | Aircraft Industry | | |
| 6 | Automobile Industry | | |
| 7 | Locomotive Industry | | |
| 8 | Electrical Industry | | |
| 9 | Space Projects | | |
| 10 | Agricultural industry | | |

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.

