

**DETAILED SYLLABUS FOR THE POST OF JUNIOR INSTRUCTOR –
SHEET METAL WORKER IN INDUSTRIAL TRAINING**
(Cat. No.: 664/2023)

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	Grooved 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	Slitting	
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 Structors	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.