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<th>Questions: Level 1</th>
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<th>8 Which metal consists of copper as main alloy?</th>
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<tbody>
<tr>
<td>1 What are the properties of Aluminium?</td>
<td></td>
<td>A Aluminium</td>
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<tr>
<td>A Malleable &amp; ductile</td>
<td></td>
<td>B Lead</td>
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<tr>
<td>B Ductile &amp; brittle</td>
<td></td>
<td>C Brass</td>
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<tr>
<td>C Malleable &amp; hard</td>
<td></td>
<td>D Nickel</td>
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<tr>
<td>D Malleable &amp; brittle</td>
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<td>2 What is the melting temperature of aluminium?</td>
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<td>A 650°C</td>
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<td>B 660°C</td>
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<td>C 670°C</td>
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<td>D 680°C</td>
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<td>3 What is the ratio of copper, tin and zinc in Gun metal?</td>
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<td>A 88%, 10% and 2%</td>
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<td>B 78%, 15% and 7%</td>
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<td>C 68%, 20% and 12%</td>
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<td>D 58%, 25% and 17%</td>
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<td>4 What is the metal other than copper and zinc added in delta metal to resist corrosion?</td>
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<td>A Lead</td>
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<td>B Iron</td>
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<td>C Nickel</td>
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<td>D Aluminium</td>
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<td>5 Which is the main ore of lead?</td>
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<td>A Bauxite</td>
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<td>B Galena</td>
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<tr>
<td>C Cuprite</td>
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<td>D Dolomite</td>
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<td>6 What is the colour of copper?</td>
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<td>A Reddish brown</td>
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<td>B Bluish grey</td>
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<td>C Silver grey</td>
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<tr>
<td>D Brown</td>
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<td>7 How many principle ores are there in copper?</td>
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<td>A Two</td>
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<td>A Aluminium</td>
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<td>C Brass</td>
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<td>D Nickel</td>
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8 Which metal consists of copper as main alloy?
A Aluminium
B Lead
C Brass
D Nickel

9 What is the type of transformer?
A Square to circle
B Off centre rectangle to circle
C Rectangle to circle with rectangle inclined
D Rectangle to circle with circle inclined

10 What is the type of transformer?
A Circle to oval
B Oval to circle
C Stove to chimney connection
D Tapered lobster back
11. What is the type of transformer?

A. Round to elliptical
B. Tapered lobster back
C. Oval to circle
D. Stove to chimney connection

12. What is the type of transformer?

A. Square to circle
B. Off centre rectangle to circle
C. Rectangle to circle with rectangle inclined
D. Rectangle to circle with circle inclined

13. What is the type of transition?

A. Circle to oval
B. Oval to circle
C. Stove to chimney connection
D. Tapered lobster back

14. Which alloy steel is used for pendulum of clocks having low coefficient of thermal expansion?

A. Vanadium steel
B. Tungsten steel
C. Nickel steel
D. Nickel molybdenum steel

15. What is the main alloy of stainless steel?

A. Vanadium
B. Chromium
C. Molybdenum
D. Cobalt

16. Which category of stainless steel contains a mixture of ferrite austerity and is magnetic?

A. Martensitic stainless steel
B. Ferritic stainless steel
C. Duplex stainless steel
D. Austenitic stainless steel

17. Which category of stainless steel is non-magnetic?

A. Duplex stainless steel
B. Austenitic stainless steel
C. Precipitation hardenable stainless steel
D. Ferritic stainless steel

18. Which steel is referred as ‘High speed steel’?

A. Cobalt steel
B. Manganese steel
C. Nickel steel
D. Tungsten steel

19. What is the percentage of nickel in invar steel?

A. 64%
B. 54%
C. 36%
D. 18%

20. Which metal is also referred as ‘German Silver’?

A. Monel metal
B. Nickel silver
C. Nickel steel
D. Nickel molybdenum steel
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<td>Why aluminium is widely used in fabrication?</td>
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<td></td>
<td><strong>A</strong> Medium weight, cannot bend</td>
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<td><strong>B</strong> More weight, cannot withstand load</td>
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<td></td>
<td><strong>C</strong> Light weight, resistant to corrosion</td>
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<td><strong>D</strong> Heavy weight, cannot be extruded</td>
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<td>Which is a permanent metal joining operation?</td>
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<td><strong>A</strong> Welding</td>
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<td><strong>B</strong> Screwing</td>
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<td></td>
<td><strong>C</strong> Seaming</td>
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<td><strong>D</strong> Hemming</td>
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<td>3</td>
<td>What is the folded edge on a sheet metal object?</td>
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<td></td>
<td><strong>A</strong> Hem</td>
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<td><strong>B</strong> Seam</td>
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<td><strong>C</strong> Clips</td>
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<td></td>
<td><strong>D</strong> Beading</td>
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<td>4</td>
<td>What is the operation that produces a shallow relief design on sheet metal?</td>
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<td></td>
<td><strong>A</strong> Forming</td>
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<td><strong>B</strong> Embossing</td>
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<td><strong>C</strong> Seaming</td>
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<td><strong>D</strong> Hemming</td>
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<td>5</td>
<td>What is the process of stretching a piece of metal by hitting it with a round hammer?</td>
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<tr>
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<td><strong>A</strong> Embossing</td>
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<td><strong>B</strong> Braising</td>
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<td><strong>C</strong> Beading</td>
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<td><strong>D</strong> Burring</td>
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<td>6</td>
<td>Which aluminium alloy prevents corrosion due to salt water?</td>
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<td></td>
<td><strong>A</strong> Y - alloy</td>
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<td><strong>B</strong> Aldural</td>
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<td><strong>C</strong> Aluminium bronze</td>
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<td><strong>D</strong> Duralumin</td>
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Module 1: Advanced Sheet Metal Process - 1. Pattern Developments - Key paper

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Questions: Level 1

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Questions: Level 2
Sheet Metal Worker - 2\textsuperscript{nd} Semester -  
Module 1 : Advanced Sheet Metal Process - 2. Drilling and Punching

Questions: Level 1

1 What is the type of clamp?

A Bent type  
B Finger type  
C Straight type  
D Goose neck type

2 What is the type of clamp?

A Bent type  
B Finger type  
C Straight type  
D Goose neck type

3 Which type of vice is used to hold the work piece while drilling in machine?

A Bench vice  
B Leg vice  
C Machine vice  
D Hand vice

4 What is the formula to calculate cutting speed (v) in m/min.?

A \( v = \frac{\pi d}{n \times 1000} \) 
B \( v = \frac{d n}{\pi \times 1000} \) 
C \( v = \frac{\pi n}{d \times 1000} \) 
D \( v = \frac{\pi d n}{1000} \)

5 What is the type of jig?

A Channel jig  
B Table jig  
C Box jig  
D Plate jig

6 What is the type of bending?

A Bending with die  
B Bending with fixture  
C Bending on pipe vice  
D Bending using bending jaw.

7 What is the name of equipment?

A Bending fixture  
B Fly press  
C Straightening fixture  
D Power press
8 What is the name of device?

A Pipe vice  
B Portable folding pipe vice  
C Chain pipe vice  
D Hydraulic bending machine

9 Which is the type of pipe cutter?

A Wheel pipe cutter  
B Power saw  
C Hack saw  
D Mult wheel chain pipe cutter
Questions: Level 2

1. What type of hand operated drilling machine is used for drilling small diameter holes upto 6 mm?
   A. Bevel gear type-drilling machine
   B. Breast type-drilling machine
   C. Ratchet type-drilling machine
   D. Pneumatic type-drilling machine

2. What is cutting speed in drilling?
   A. Rotation of drill at its axis
   B. Rotation of work piece that being drilled
   C. Rate of material removed by drilling
   D. Distance travelled by a drill over the job in one minute

3. What is feed in drilling operation?
   A. Amount of material the drill removes
   B. Drill advances in one complete rotation
   C. Total depth of the drilled hole
   D. Width of the chip removed by drill

4. Which type of cutting fluid is used while drilling Aluminium?
   A. Mineral oil
   B. Air
   C. Soluble oil
   D. Chemical or synthetic soluble oil

5. What is the percentage of soluble oil mixed with water?
   A. 20 %
   B. 15 %
   C. 10 %
   D. 5 %

6. Which type of cutting fluid is used while drilling cast iron?
   A. Chemical solution
   B. Mineral oil
   C. No cutting fluid
   D. Soluble oil

7. Which type of cutting fluid with high anti-rust property is recommended for grinding iron, steel, non-alloyed and nickel chrome steel?
   A. Servo cut S
   B. Servo cut XL
   C. Servo cut clear
   D. Servo synth 5

8. What is the purpose of fixture?
   A. To hold the job
   B. To guide the cutting tool
   C. To hold the Job and guide the cutting tool
   D. To locate and hold the work piece

9. Which type of jigs are used to hold the large or awkwardly shaped work pieces?
   A. Box jig
   B. Solid jig
   C. Sandwich jig
   D. Trunnion jig

10. What type of jig is suitable for thin and soft work pieces?
    A. Table jig
    B. Plate jig
    C. Channel jig
    D. Sandwich jig

11. What is the purpose of jig?
    A. To hold the job
    B. To guide the cutting tool
    C. To locate and hold the work piece
    D. To hold, support, locate and also guides the cutting tool
Module 1: Advanced Sheet Metal Process - 2. Drilling and Punching - Key paper

### Questions: Level 1

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Questions: Level 1

1. What is the type of die?

A. Channel die
B. Acute angle die
C. Radius bending die
D. Interchangeable four way die

2. What is the name of machine?

A. Bar folder
B. Mechanical press brake
C. Universal swaging machine
D. Three roll forming machine

3. What is the sheet metal operation if reducing the diameter of the pipe for joining to same diameter of other pipe?

A. Crimping
B. Beading
C. Grooving
D. Corrugating

4. Which is the type of machine to perform the sheet metal operation like beading, crimping and corrugating?

A. Bar folder
B. Bench folder
C. Nibbling machine
D. Universal swaging machine

5. What is the type of bead?

A. Single bead
B. Ogee bead
C. Triple bead
D. Corrugating

6. What is the operation of forming a sheet metal into a series of straight parallel alternate ridges and grooves?

A. Bending
B. Crimping
C. Grooving
D. Corrugating

7. What is the operation on cylindrical sheet metal objects to provide stiffness for reinforcement or ornamentation?

A. Crimping
B. Corrugating
C. Beading
D. Grooving

8. What type of machine is used for double hemming process?

A. Beading machine
B. Grooving machine
C. Bar folder machine
D. Universal swaging machine

9. What is the name of part marked as ‘X’?

A. Body
B. Crank
C. Horn
D. Grooving roll
10. What is the size of grooved roller, widths used in seaming machine?
   A. 2, 3, 4 & 5 mm
   B. 2, 4, 6 & 8 mm
   C. 3, 4, 5 & 6 mm
   D. 3, 4, 6 & 8 mm

11. What is the name of part marked as ‘X’?
   A. Taper pin
   B. Wedge
   C. Clamping dog
   D. Forming plate

12. What is the name of part marked as ‘X’?
   A. Taper pin
   B. Wedge
   C. Forming plate
   D. Clamping dog

13. What is the formula to calculate length ‘X’ for the given data?

14. What is the formula to calculate the length of the angle section, if ‘D1’ is heel diameter and ‘T’ is thickness of angle section?

15. What type of operation is performed?
   A. Fitting forming plate
   B. Securing the work
   C. Forming (web inside)
   D. Forming (web outside)
16. What is the type of bending operation?

A. Bending on vice
B. Bending using bending jaw
C. Bending with bending fixtures
D. Bending with bending die

17. What is the type of bending operation?

A. Bending on vice
B. Bending using bending jaw
C. Bending with bending fixtures
D. Bending with bending die

18. What is the formula to calculate the length of the curved space, if ‘R’ is the radius on neutral axis?

A. \( \frac{360 \times \text{Angle of curve}}{2\pi R} \)
B. \( \frac{\text{Angle of curve}}{360} \times 2\pi R \)
C. \( \frac{\text{Angle of curve} \times R}{2\pi \times 360} \)
D. \( \frac{\text{Angle of curve} \times 2\pi}{R \times 360} \)
Questions: Level 2

1. What is the capacity range of mechanical presses?
   A. 5 to 4000 tonnes
   B. 5 to 4100 tonnes
   C. 5 to 4200 tonnes
   D. 5 to 4300 tonnes

2. What is the maximum capacity of hydraulic presses?
   A. 2000 tonnes
   B. 3000 tonnes
   C. 4000 tonnes
   D. 5000 tonnes

3. Which type of machine perform various sheet metal operations like turning, burring, beading, swaging, wiring, crimping, slitting and flanging?
   A. Nibbler
   B. Three roll forming machine
   C. Universal swaging machine
   D. Bar folder

4. How the fly press is specified?
   A. Ball weight
   B. Screw rod dia
   C. Fly arm length
   D. Distance between Ram and Bed

5. What is the type of operation?
   A. Forming
   B. Drawing
   C. Plunging
   D. Curling

6. What is the type of operation?
   A. Drawing
   B. Curling
   C. Plunging
   D. Forming

7. What is the type of operation in cutting sheet metal with the help of a punch and die on power press?
   A. Punching
   B. Piercing
   C. Blanking
   D. Shearing

8. What is the operation if circular holes are made in a regular pattern or evenly spaced?
   A. Perforating
   B. Plunging
   C. Punching
   D. Piercing
### Module 1: Advanced Sheet Metal Process - 3. Bending and Pressing - Key paper

#### Questions: Level 1

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<td>4 What is the name of the part marked as ‘X’?</td>
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<tr>
<td>1 What is the type of polishing machine?</td>
<td>A Work/Tool rest</td>
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<td>A Polishing machine with cloth wheels</td>
<td>B Eye shield</td>
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<tr>
<td>B Portable polishing machine with polishing disc</td>
<td>C Wheel guard</td>
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<tr>
<td>C Polishing machine with abrasive belt</td>
<td>D Grinding wheel</td>
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<tr>
<td>D Polishing with abrasive covered wheels</td>
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<tr>
<td>2 What is the type of grinding machine?</td>
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<td>A Bench grinder</td>
<td>A Polishing machine with cloth wheels</td>
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<tr>
<td>B Pedestal grinder</td>
<td>B Portable polishing machine with polishing disc</td>
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<tr>
<td>C Portable grinder</td>
<td>C Polishing/machine with abrasive belt</td>
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<tr>
<td>D Surface grinder</td>
<td>D Polishing with abrasive covered wheels</td>
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<td>3 What is the name of the part marked as ‘X’?</td>
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<tr>
<td>A Work/Tool rest</td>
<td>A Head stock</td>
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<td>B Eye shield</td>
<td>B Tail stock</td>
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<tr>
<td>C Wheel guard</td>
<td>C Lathe spindle</td>
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<tr>
<td>D Grinding wheel</td>
<td>D Bed</td>
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</table>
8 What is the name of part marked as ‘X’?
A Head stock
B Tail stock
C Lathe spindle
D Lathe Bed

9 What is the name of part marked as ‘X’?
A Former
B Follower
C Live centre
D Lathe spindle

10 What is the name of part marked as ‘X’?
A Former
B Follower
C Live centre
D Lathe spindle

11 Which type of die can be separated and removed easily from a finished component?
A Core die
B Segmental die
C Inside die
D Outside die

12 What is the operation for producing a seamless Article on a Lathe machine?
A Seaming
B Crimping
C Spinning
D Forming

13 What is the material used to make spinning tools?
A High carbon steel
B High speed steel
C Low carbon steel
D Medium carbon steel

14 What is the overall length of a spin hand-forming tool?
A Between 750 and 850 mm
B Between 300 and 450 mm
C Between 650 and 700 mm
D Between 450 and 500 mm

15 What is the name of tool?
A Ball tool
B Bending tool
C Hook tool
D Combination ball and point tool

16 Which admits the atmospheric pressure in suction feed type spray gun for painting?
A Air valve
B Fluid needle valve
C Vent on paint cup
D Compressed air inlet

17 What is the process of surface finish to produce shining or mirror finish to metallic component?
A Buffing
B Polishing
C Scratching
D Grinding

18 Which is a decomposed limestone abrasive, yellowish brown in colour used for polishing brass and copper?
A Pumice
B Rouge
C Tripoli
D Whiting
19. What is the name of part marked as ‘X’?

A. Fluid Needle
B. Air valve
C. Compressed air
D. Paint

20. Which is the ideal temperature for spray painting?

A. 75°C
B. 24°C
C. 34°C
D. 26°C
### Questions: Level 2

1. What is the purpose of polishing operation?
   - A. To correct to assemble parts
   - B. To correct the dimension required
   - C. To form required shape
   - D. To make scratch free surface

2. Which is the safety precaution in spinning operation?
   - A. Cleaning not necessary since no metal removal
   - B. Coolant not necessary since no metal removal
   - C. Never oil a machine in motion
   - D. PPE wearing not necessary

3. Which lubricant is used in spinning operation?
   - A. Tallow industrial soap
   - B. Soluble oil
   - C. Kerosene oil
   - D. Mineral oil

4. Which is the disadvantage of spinning process?
   - A. Faster process
   - B. Saving time
   - C. Die can be modified for the next job
   - D. Slow process

5. Which die is used for forming the neck of a vessel after initial drawing?
   - A. Segmental die
   - B. Core die
   - C. Outside die
   - D. Inside die

6. What will be the cost of spinning die compared to a press tool?
   - A. Cheap
   - B. Costly
   - C. Equal
   - D. More costly

7. Which is necessary to protect the tool from damage in spinning operations?
   - A. Do not lubricate the tool
   - B. Lubricate the tool
   - C. Too much lubricant should use
   - D. Kerosene used as lubricant

8. Which type of spinning tool is used to trim the extra metal from the edge of spin object?
   - A. Round nose tool
   - B. Fish Tail planishing tool
   - C. Cut off tool
   - D. All purpose tool

9. What is provided on the cylinder of air compressor to dissipate the heat?
   - A. Air cleaner
   - B. Radiator
   - C. Air fins
   - D. Water pump

10. What is the method used to remove the irregularities on edges of 4 mm and above thick ferrous plate by gas cutting?
    - A. Chipping
    - B. Grinding
    - C. Chiseling
    - D. Filing

11. What is used for buffing to produce a satin finish on a metal surface?
    - A. Polishing Disc
    - B. Wire Wheel
    - C. Abrasive Belt
    - D. Flexible abrasive sheet

12. How the article is held and fed against the buffing wheel in buffing?
    - A. Above the centre line of the buffing wheel
    - B. Sides of the Buffing wheel
    - C. Exactly in the centre line of the wheel
    - D. Below the centre line of the buffing wheel

13. What is the shape of spray pattern, if the fan adjustment screws air flowing through the two side/port holes of the Spray Gun?
    - A. Semi circle
    - B. Oval
    - C. Irregular pattern
    - D. Round
### Module 2: Welding - 1. Spinning, Polishing and Painting - Key paper

#### Questions: Level 1

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- NIMI Question Bank -

Page 5/5
Questions: Level 1

1. What is the basic welding joint?
   A. Butt joint
   B. Lap joint
   C. Corner joint
   D. Edge joint

2. What is the term marked as 'X'?
   A. Weld face
   B. Reinforcement
   C. Root penetration
   D. Toe

3. What is the term marked as 'X'?
   A. Toe
   B. Leg length
   C. Weld junction
   D. Reinforcement

4. What is the pitch of tack weld for M.S. Plates of 3 mm thickness in butt weld?
   A. 150 mm
   B. 25 mm
   C. 250 mm
   D. 15 mm

5. What is the welding position?
   A. Horizontal position
   B. Vertical up position
   C. Vertical down position
   D. Flat or Down hand position

6. What is the name of technique marked as 'X'?
   A. Root penetration
   B. Root run
   C. Key hole
   D. Excess fusion

7. What is the ignition temperature of steel for Gas Cutting?
   A. 750°C - 800°C
   B. 800°C - 900°C
   C. 875°C - 900°C
   D. 900°C - 950°C

8. What is the term marked as 'X'?
   A. Kerf
   B. Drag
   C. Bead
   D. Gouging
9. Which electrode material is used for plasma cutting?
A 3% thoriated tungsten  
B 4% thoriated tungsten  
C 2% thoriated tungsten  
D 5% thoriated tungsten

10. What is the temperature range of plasma stream?
A Upto 2000°K  
B Upto 20012°K  
C Upto 20000°K  
D Upto 20020°K

11. What is the term for the straight distance between the Electrodes tip and job surface at arc formation?
A Arc blow  
B Arcing force  
C Arc length  
D Arc leg

12. What is the temperature for ice to melt?
A 0°C  
B 32°C  
C 100°C  
D 80°C

13. What is the freezing point of water in Fahrenheit scale?
A 0°F  
B 180°F  
C 100°F  
D 32°F
Questions: Level 2

1. What is the method of welding?
   A. Arc welding
   B. Pressure welding
   C. Fusion welding
   D. Thermit welding

2. What is the advantage of a welded joint?
   A. Easily separated by heating
   B. Can’t be done quickly
   C. Occupies more space
   D. A permanent pressure tight joint

3. What is the disadvantage of soldering joint than other joining methods?
   A. Soldered joint can withstand higher temperature
   B. Soldered joint cannot take more load
   C. Soldering can also be done on thicker plate also
   D. Soldering can not be separated

4. What is the purpose of root gap in welding?
   A. To control the Arc
   B. To increase surface tension
   C. To obtain complete penetration
   D. To align the work in position

5. What is the process of separating metal on heating by chemical reaction of oxygen and heated metal?
   A. Gas cutting
   B. Plasma cutting
   C. Laser beam cutting
   D. Water jet cutting

6. What is known as heating the metal before welding or cutting?
   A. Oxidizing
   B. Post heating
   C. Flame hardening
   D. Pre heating

7. What is the pre-heating temperature of steel
   Approximately for Gas Cutting?
   A. 900°C
   B. 800°C
   C. 600°C
   D. 700°C

8. What is the chemical reaction of substance with oxygen?
   A. Ionisation
   B. Oxidation
   C. Reaction
   D. Formation

9. Which is the characteristic of plasma arc cutting?
   A. Cuts are not so good quality
   B. Cutting speed very slow
   C. Non-metals can’t be cut
   D. High speed piercing is achieved

10. Which is the method to cut metal by ionised gas along with the arc forced through a small nozzle orifice?
    A. Laser beam cutting
    B. Water jet cutting
    C. Gas cutting
    D. Plasma arc cutting

11. Which method of cutting is used to cut rubber?
    A. Plasma cutting
    B. Gas cutting
    C. Laser beam cutting
    D. Water jet cutting

12. Which is the material that can not be cut with water jet cutting?
    A. Plastic
    B. Diamond
    C. Leather
    D. Stone

13. Which number has the higher finished edge quality in water jet cutting?
    A. Q5
    B. Q3
    C. Q4
    D. Q1

14. Which cutting method produces the least Kerfs Width?
    A. Plasma Arc cutting
    B. Laser beam cutting
    C. Electric Arc cutting
    D. Gas cutting
15 Which method of cutting is used with a coaxial gas jet to blow away the molten metal?
A Gas cutting
B Water jet cutting
C Laser beam cutting
D Plasma Arc cutting

16 Which cutting method is used to cut brittle material?
A Plasma Arc cutting
B Laser beam cutting
C Electric Arc cutting
D Gas cutting

17 What is temperature in Fahrenheit scale of 200°C in Celsius scale?
A 212°F
B 218°F
C 300°F
D 392°F

18 What is the temperature in degree Celsius if the temperature -40°F in Fahrenheit scale?
A -12°C
B 22°C
C 32°C
D -40°C

19 Which is the process for plasma arc cutting?
A Thermal cutting process
B Chemical reaction process
C Friction cutting process
D Flame cutting process
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<th>Questions Level 3</th>
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<tbody>
<tr>
<td>1  Which effect attracts and retains the molten metal in to the base metal in welding?</td>
</tr>
<tr>
<td>A  Gravity force</td>
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<td>B  Surface tension</td>
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<td>C  Gas expansion force</td>
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<td>D  Electromagnetic force</td>
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<td>2  What is the effect that induces metal transferring in welding?</td>
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<td><img src="" alt="Diagram" /></td>
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<tr>
<td>A  Gravity force effect</td>
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<td>B  Electro magnetic effect</td>
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<td>C  Surface tension effect</td>
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<td>D  Gas expansion effect</td>
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<td>3  Which is an effect of long Arc?</td>
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<tr>
<td>A  More fusion and penetration</td>
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<td>B  Less spatter</td>
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<td>C  Correct metal deposition</td>
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<td>D  Poor fusion and penetration</td>
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<td>4  Which is the effect of normal arc length?</td>
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<tr>
<td>A  Correct fusion and penetration</td>
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<td>B  More spatters</td>
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<td>C  Unstable arc</td>
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<tr>
<td>D  Poor control of molten metal</td>
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Questions: Level 1

1. What is termed as motion of electrons?
   A. Voltage  
   B. Current  
   C. Ampere  
   D. Potential

2. Which Instrument is used to measure voltage/emf?
   A. Ammeter  
   B. Megger  
   C. Volt meter  
   D. Barometer

3. What is the property that oppose the flow of electric current in a conductor?
   A. Insulator  
   B. Regulator  
   C. Electromotive force  
   D. Resistance

4. Which is the material that does not transmit electricity?
   A. Conductor  
   B. Regulator  
   C. Insulator  
   D. Transistor

5. What is the current that changes its direction and magnitude number of times per seconds?
   A. Series circuit  
   B. Alternating current  
   C. Direct current  
   D. Parallel circuit

6. What is the name of machine?
   A. DC welding transformer  
   B. Welding rectifier  
   C. AC welding transformer  
   D. Welding generator

7. Which part of welding generator used to produce magnetic lines of force?
   A. Armature  
   B. Yoke  
   C. Main poles  
   D. Commutator

8. What is the material used for making supporting plate of welding rectifier cell?
   A. Steel or Aluminium  
   B. Copper  
   C. Tin  
   D. Zinc

9. Which Gas is used in Co₂ Welding?
   A. Oxygen  
   B. Argon  
   C. Carbon dioxide  
   D. Helium

10. What is the name of electric welding?
    A. MIG Welding  
    B. Carbon Arc Welding  
    C. TIG Welding  
    D. Arc Welding

11. Which is the welding process welding job remains out of the welding circuit?
    A. Atomic hydrogen Arc welding  
    B. Carbon Arc welding  
    C. Resistance welding  
    D. TIG welding

12. What is the electric welding method?
    A. Arc welding  
    B. Resistance welding  
    C. Carbon Arc welding  
    D. TIG welding
13 Which type of weld joint indicates the symbol?

A Spot weld  
B Plug weld  
C Seam weld  
D Backing weld

14 Which type of weld joint indicates the symbol?

A Single U butt weld  
B Single J butt weld  
C Plug weld  
D Fillet weld

15 Which type of weld joint indicates the symbol?

A Single V butt weld  
B Double V butt weld  
C Fillet weld  
D Single bevel butt weld

16 Which type of weld joint indicates the symbol?

A Backing Run  
B Spot welding  
C Single U butt weld  
D Seam weld

17 Which is the type of weld joint indicates the symbol?

A Spot weld  
B Seam weld  
C Plug weld  
D Groove weld
Questions: Level 2

1. Which is the feature of AC welding transformer?
   A. Reduces the main supply voltage
   B. Increase the main supply voltage
   C. Convert DC into AC
   D. Convert AC into DC

2. Which is the working principle of AC welding transformer?
   A. External Induction
   B. Mutual Induction
   C. Core Induction
   D. Mutual Reduction

3. Which is a disadvantage of AC welding?
   A. Less initial cost
   B. Less maintenance cost
   C. Not suitable for welding of Non-ferrous metals
   D. Freedom from Arc blow

4. Which is the function of welding rectifier?
   A. Reduces AC voltage
   B. Increases AC voltage
   C. Convert AC into DC
   D. Increases AC current

5. Which is a disadvantage of DC Welding?
   A. Higher working efficiency
   B. Lower working efficiency
   C. No noise
   D. Less maintenance cost

6. What is the purpose of prime mover provided in the welding generator?
   A. To convert AC into DC
   B. To take AC main supply
   C. To rotate the Armature
   D. To supply DC for welding
Questions Level 3

1. Which check is included in visual inspection before welding stage?
   A. Weld size
   B. Selection of welding rod
   C. Welding speed
   D. Weld size

2. Which check is included in visual inspection during the welding?
   A. Selection of the Nozzle
   B. Distortion in joint
   C. Welding technique
   D. Quality of prepared edges

3. Which is a check in visual inspection after welding stage?
   A. Feeding of the filler rod
   B. Gas pressure
   C. Blow pip position
   D. Under cut

4. Which is a visual inspection of a welded joint?
   A. Surface defects in weld face
   B. Internal distortion of the weld
   C. Fracture test
   D. Bend test
### Module 2: Welding - 3. Arc and Resistance Welding - Key paper

#### Questions: Level 1

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#### Questions: Level 2

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#### Questions: Level 3

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</table>
1. What is the name of part marked as ‘X’?

A. Idler gear
B. Centre guide
C. Wire feed roller
D. Input guide insert

2. What is the part marked as ‘X’?

A. Electrode wire
B. Shielding gas
C. Combination cable
D. Hallow flexible current carrying electrode lead

3. What is the part marked as ‘X’?

A. Nozzle
B. Trigger
C. Torch handle
D. ON-OFF switch

4. What is the part marked as ‘X’?

A. Smoke extracting chamber
B. Air flow cable
C. Smoke collector with filter
D. Power cable

5. What is the part marked as ‘X’?

A. Power cable
B. Air flow cable
C. Smoke extracting chamber
D. Smoke collector with filter

6. Which is the non consumable electrode is used in GTAW process?

A. Carbon electrode
B. Copper electrode
C. Aluminium electrode
D. Tungsten electrode

7. What is the type of nozzle is used in TIG welding?

A. Brass nozzle
B. Ceramic nozzle
C. Copper nozzle
D. Aluminium nozzle

8. What is the angle marked as ‘X’ in TIG welding?

A. 45° - 50°
B. 50° - 60°
C. 60° - 75°
D. 75° - 80°
9. What is the part marked as ‘X’?

A. Arc  
B. Filler  
C. Argon shield  
D. Tungsten rod

10. What is the minimum percentage of chromium in stainless steel?

A. 6.5%  
B. 8%  
C. 10%  
D. 12%

11. What is the range of PWHT for stainless steel grade 316L?

A. 1010° - 1120°C  
B. 1035° - 1120°C  
C. 1035° - 1107°C  
D. 1065° - 1120°C
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<th>Options</th>
<th>Correct Answer</th>
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<tr>
<td>1</td>
<td>Which is the welding process that produces the arc with bare filler rod shielded by CO₂ gas?</td>
<td>A MAG welding, B MIG welding, C TIG welding, D Plasma arc welding</td>
<td>B MIG welding</td>
</tr>
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<td>2</td>
<td>How the molten puddle is protected against atmospheric oxygen and nitrogen while using bare electrode in MAG welding?</td>
<td>A By air, B By flux, C By electrode, D By shielding gas CO₂</td>
<td>D By shielding gas CO₂</td>
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<td>3</td>
<td>What is the purpose of inlet end of heater connected to gas cylinder in CO₂ welding?</td>
<td>A Enable flow to regulator, B Avoid ice forming of CO₂, C Connect to flow meter, D Improve flow of gas</td>
<td>A Enable flow to regulator</td>
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<td>4</td>
<td>Which gas mixture is used in GMAW spray transfer for 25 - 76 mm thick Aluminium block?</td>
<td>A 90% Helium 10% Argon, B 90% Helium 25% Argon, C 75% Helium 10% Argon, D 75% Helium 25% Argon</td>
<td>B 90% Helium 25% Argon</td>
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<td>5</td>
<td>What is the gas mixture used for copper, nickel and alloys of heavier gauge thickness in GMAW spray transfer?</td>
<td>A Argon, B Helium, C Helium - Argon, D Argon - Oxygen</td>
<td>B Helium</td>
</tr>
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<td>6</td>
<td>What is the normal preheating temperature for Aluminium Welding by TIG process?</td>
<td>A 100° - 120°C, B 160° - 180°C, C 180° - 205°C, D 200° - 220°C</td>
<td>D 200° - 220°C</td>
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<td>What is the flow rate of argon gas to weld Aluminium of 5.0 mm thickness with filler rod of 3.15 mm?</td>
<td>A 300 - 340 l/h, B 340 - 400 l/h, C 450 - 510 l/h, D 510 - 570 l/h</td>
<td>B 340 - 400 l/h</td>
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<td>8</td>
<td>Which is the process of rapid cooling of metal from a high temperature for the purpose of hardening?</td>
<td>A Drilling, B Pickling, C Quenching, D Soaking</td>
<td>C Quenching</td>
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<td>9</td>
<td>Which is the recommended AWS filler metal for welding austenitic stainless steel Type 302 for GTAW process?</td>
<td>A E 308, B E 308 L, C ER 308 L, D E 308 LT - X</td>
<td>D E 308 LT - X</td>
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<td>10</td>
<td>What is the recommended tungsten electrode tip for DCEN used for welding stainless steel in GTAW process?</td>
<td>A 45° bevel edged, B 60° conical point, C 90° conical pointed, D Ball pointed</td>
<td>A 45° bevel edged</td>
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<td>11</td>
<td>What is the recommended tungsten electrode tip used for GTAW in AC polarity?</td>
<td>A Bevel tip, B Conical tip, C Rounded tip, D Straight tip</td>
<td>C Rounded tip</td>
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Questions Level 3

1. What is the defect caused by air mixed with gas in CO₂ welding?
   A. Over lap
   B. Blow hole
   C. Incomplete penetration
   D. Excess wide bead

2. What is the cause for excessive wide bead while welding in CO₂ process?
   A. Inadequate gas flow
   B. Welding current too low
   C. Too small dia of nozzle
   D. Welding speed too low

3. What is the defect caused by high current and low voltage in GMAW process?
   A. Spatter
   B. Undercut
   C. Incomplete fusion
   D. Crack on base metal

4. What is the remedy for incomplete fusion of weld in GMAW process?
   A. Dirty weld joint
   B. Too long cable
   C. Improper welding angle
   D. Correct the root dimension

5. What is the remedy to prevent the air contamination in weld by GMAW process?
   A. Connect the gas regulator
   B. Increase the length of gas pipe
   C. Inert gas backing
   D. Reduce flow rate of gas

6. What is the reason for overheating of welding cables?
   A. Welding speed low
   B. Welding speed high
   C. Cable connection loose
   D. Improper welding angle
Module 2: Welding - 4. TIG and CO₂ Welding - Key paper

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Questions: Level 1

1 What is the name of part marked as ‘X’?

A Glass
B Rubber packing
C Glazing clips
D Single partition

2 What is the part marked as ‘X’?

A Bearing
B Glazing clip
C Rubber packing
D Holding screws

3 What is the specification of a screw driver?
A Width of blade
B Length of blade
C Thickness and length of the blade
D Width of tip and length of the blade

4 What is the name of socket head tip marked as ‘X’?

A Slab socket head
B Clutch socket head
C Spline socket head
D Hexagonal socket head

5 What is the name of socket head tip marked as ‘X’?

A Slab socket head
B Clutch socket head
C Spline socket head
D Hexagonal socket head

6 What is the type of screw driver?
A Phillips type screw driver
B Flat tip screw driver
C Impact screw driver
D Instrument screw driver

7 What is the purpose of plastic sleeve fitted upto the tip of blade in screw driver?
A Protect from damage
B Prevent against rusting
C Interchange the blade
D Insulated for electrical work
8. What is the type of slotted screw?

A. Slotted pan head screw
B. Slotted cheese head screw
C. Slotted countersunk (flat) head screw
D. Slotted raised countersunk (oval) head screw

9. What is referred in screw thread specification: M24 x 2?

A. Major diameter and depth
B. Minor diameter and pitch
C. Mean diameter and depth
D. Major diameter and pitch

10. What is the type of wood screw?

A. Slotted pan head screw
B. Slotted pan head tapping screw
C. Recessed countersunk (flat) head screw
D. Recessed raised countersunk (oval) head screw

11. Which is the basis to calculate the expenditure for a definite unit of product?

A. Tax accounting
B. Cost accounting
C. Managerial accounting
D. Financial accounting

12. Which accounts for selling price of a product?

A. Material cost + labour cost
B. Manufacturing cost + profit
C. Material cost + manufacturing cost
D. Material cost + manufacturing cost + profit
### Questions: Level 2

1. What is the use of aluminium in pharmaceutical industry?
   - A: Aircraft parts
   - B: Doors and windows
   - C: Tablet strips packing
   - D: Railway coaches

2. What is the purpose of vertical rib with round shape on its top in bottom frame of window?
   - A: Seal the glass partition
   - B: Hold rubber packing
   - C: Insert metal screws
   - D: Provide track for sliding window

3. Which screw thread of 55° included angle and depth of thread is 0.6403 p is used in general engineering fasteners?
   - A: BA thread
   - B: BIS thread
   - C: BSP thread
   - D: BSW thread

4. Which screw thread of 47½° included angle is used in electrical and instrument screws?
   - A: BA
   - B: BSW
   - C: BSP
   - D: BSF

5. Which is the material used in construction of navy boats?
   - A: Wood
   - B: Steel
   - C: Aluminium
   - D: Fibreglass

6. What is the purpose of glass lining of valves, pipes and pumps?
   - A: Abrasion
   - B: Wear and tear
   - C: Heat radiation
   - D: Corrosion prevention

7. Which type of packing is used for side rolling and folding hatch covers?
   - A: Glass lining
   - B: Sponge rubber
   - C: Sliding rubber
   - D: MDF board

8. Which type of glass is used in manufacture of artificial gems, electric bulbs, lens and prism?
   - A: Common glass
   - B: Soda - lime glass
   - C: Potash - lime glass
   - D: Potash - lead glass

9. What is the type of inspection to find the fault in an any product before it finished?
   - A: Quality inspection
   - B: Inspection of dimension
   - C: Intermediary inspection
   - D: Inspection of mechanical intensity

10. Which is the calculation performed before the manufacture of a product?
    - A: Cost
    - B: Profit
    - C: Estimate
    - D: Expenditure

11. What is marked as ‘X’ in stiffening of large panels?
    - A: Edges folded
    - B: Edges pane down
    - C: Top-hat section
    - D: P-section frame

12. What is marked as ‘X’ in edge stiffening?
    - A: Edges folded
    - B: Edges pane down
    - C: Top-hat section
    - D: P-section frame
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| 13       | What is the method of reinforcing very large panel in sheet metal work? | A Wiring  
B Seaming  
C Rolling  
D Stiffening |
| 14       | Which is the stiffening done for edges of large panels made by rigid and strong metal sheets? | A Wiring  
B Hemming  
C False wiring  
D Pane down over flange |
| 15       | How is the centre of large panel stiffened in sheet metal work? | A Edges folded  
B Edges pane down  
C Use top-hat section  
D Form p-section frame |
Module 3 : Repairing Technique - 1. Aluminum Fabrication

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Questions: Level 1

1. What is the type of dolly?
   A. Curvature dolly
   B. Toe shaped dolly
   C. Domed square dolly
   D. Regular curvature dolly

2. What is the type of dolly?
   A. Toe shaped dolly
   B. Heel shaped dolly
   C. Flat iron shaped dolly
   D. Rounded and curved edge dolly

3. What is the type of dolly?
   A. Flat iron shaped dolly
   B. Rounded and curved edge dolly
   C. Regular curvature knife dolly
   D. Various curvatures with bottom leg dolly

4. What is the type of dolly?
   A. Curvature dolly
   B. Toe shaped dolly
   C. Domed square dolly
   D. Regular curvature dolly

5. Which indicates the tool marks by filing marked as ‘X’?
   A. Low spots
   B. Filing direction
   C. Shiny surface
   D. File mark pattern

6. What is the pressure capacity (in psi) for two stage piston type compressor?
   A. 150
   B. 500
   C. 2500
   D. 5000

7. Which is the air pressure on compressor keep on changing with movement of piston in the cylinder?
   A. Inlet pressure
   B. Discharge pressure
   C. Ambient pressure
   D. Mean effective pressure

8. What is the type of silencer?
   A. Baffle type
   B. Resonance type
   C. Absorber type
   D. Combined absorber and resonance type

9. Which is the silencer that has separate inlet and outlet tubes assembled one over the other and flow direction turn about to exhaust the gases?
   A. Baffle type
   B. Absorber type
   C. Straight through flow type
   D. Resonance reverse flow type
10 Which is placed with soft and porous glass wool, or fibre glass placed around the perforated exhaust tube?
A Baffle type  
B Resonance type  
C Absorbent type  
D Combined type

11 What is the type of silencer?
A Baffle type  
B Resonance type  
C Absorbent type  
D Combined type

12 What is the part marked as ‘X’?
A Air fins  
B Water tubes  
C Blockage tubes  
D Leakage tubes

13 What is the part marked as ‘X’?
A Air fins  
B Water tubes  
C Blockage tubes  
D Leakage tubes

14 What is the part marked as ‘X’?
A Inlet pipe  
B Overflow pipe  
C Outlet pipe  
D Core

15 What is the type of radiator fins?
A Plate fins  
B Spiral fins  
C Straight fins  
D Serpentine fins

16 What is the type of hammer?
A Circular faced hammer  
B Square checked face hammer  
C Ball faced and square faced hammer  
D Dome faced circular face hammer
Questions: Level 2

1. Which is the type of hammer used for forming channel and for minor dents planishing?
   A. Square checked face hammer
   B. Dome faced circular hammer
   C. Top circular and bottom square faced hammer
   D. Cylindrical top pane and round flat faced hammer

2. Which type of hammer is used in repairing vehicle body to be heated and reshaped?
   A. Square checked face hammer
   B. Dome faced circular hammer
   C. Top circular and bottom square faced hammer
   D. Cylindrical top pane and round flat faced hammer

3. Which hammer is used for reshaping the concave shaped parts in vehicle body?
   A. Square checked face hammer
   B. Dome faced circular hammer
   C. Top circular and bottom square faced hammer
   D. Cylindrical top pane and round flat faced hammer

4. Which hammer is used for normal minor denting and planishing operation in body repair?
   A. Circular faced hammer
   B. Square checked face hammer
   C. Ball faced and square faced hammer
   D. Dome faced circular face hammer

5. Which is the tool used for finishing to smooth surface after filling the dent of vehicle body?
   A. Chisel
   B. Scraper
   C. Hammer
   D. Body file

6. Which operation is performed after filing the high spots of lead loaded surface on major body repair?
   A. Apply paint
   B. Clean with oil
   C. Finish with smooth emery
   D. Test by feel and sight

7. What is marked as ‘X’ in single stage compressor?

8. Which type of injury can be avoided by using leather gloves?
   A. Spine damage
   B. Crushing of hand
   C. Crushing of feet
   D. Cuts and abrasion

9. What is avoided by using safety shoes with steel toe?
   A. Spine damage
   B. Crushing of hand
   C. Crushing of feet
   D. Cuts and abrasion

10. What is the precaution required on moving overhead loads?
    A. Wear safety shoes
    B. Use leather gloves
    C. Warn to stand clear
    D. Wear safety helmet

11. Which is used in jacking and towing of heavy load and is a part of the item being lifted?
    A. Wedge
    B. Roller
    C. Timber packing
    D. Welded legs

12. Which is used in lifting and moving with loads above the ground?
    A. Winch
    B. Crow bar
    C. Layer and rollers
    D. Cranes and slings
Questions Level 3

1. What is type of injury caused while lifting and handling metal jobs with rough surfaces and jagged edges?
   A. Cuts and abrasion
   B. Strains to muscles
   C. Crushing of feet
   D. Strain to back bone
### Module 3: Repairing Technique - 2. Repair Work - Key paper

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