



RQF LEVEL 4



MATAC401
**MANUFACTURING
TECHNOLOGY**

Assembling Manufactured Parts or Components

TRAINER MANUAL

October, 2024



ASSEMBLING MANUFACTURED PARTS OR COMPONENTS



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Original published version: October, 2024

ACKNOWLEDGEMENTS

The publisher would like to thank the following for their assistance in the elaboration of this training manual:

Rwanda TVET Board (RTB) extends its appreciation to all parties who contributed to the development of the trainer and trainee's manuals for the TVET Certificate IV in Manufacturing Technology, specifically for the module **"MATAC401: Assembling Manufactured Parts or Components"**

We extend our gratitude to KOICA Rwanda for its contribution to the development of this training manual and for its ongoing support of the TVET system in Rwanda.

We extend our gratitude to the TQUM Project for its financial and technical support in the development of this training manual.

We would also like to acknowledge the valuable contributions of all TVET trainers and industry practitioners in the development of this training manual.

The management of Rwanda TVET Board extends its appreciation to both its staff and the staff of the TQUM Project for their efforts in coordinating these activities.

This training manual was developed:

Under Rwanda TVET Board (RTB) guiding policies and directives



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ACRONYMS

CBT/A: Competency-Based training/Assessment

CBT: Competency Based Training

IC: Indicative Content

KOICA: Korea International Corporation Agency

LO: Learning Outcome

PPE: Personal Protective Equipment

RTB: Rwanda TVET Board

TQUM Project: TVET Quality Management Project

TVET: Technical and Vocational education and Training

INTRODUCTION

This trainer's manual includes all the methodologies required to effectively deliver the module titled "**Assembling Manufactured Parts or Components.**" trainees enrolled in this module will engage in practical activities designed to develop and enhance their competencies.

The development of this training manual followed the Competency-Based Training and Assessment (CBT/A) approach, offering ample practical opportunities that mirror real-life situations.

The trainer's manual is organized into Learning Outcomes, which is broken down into indicative content that includes both theoretical and practical activities. It provides detailed information on the key competencies required for each learning outcome, along with the objectives to be achieved.

As a trainer, you will begin by asking questions related to the activities to encourage critical thinking and guide trainees toward real-world applications in the labor market. The manual also outlines essential information such as learning hours, didactic materials, and suggested methodologies.

This manual outlines the procedures and methodologies for guiding trainees through various activities as detailed in their respective trainee manuals. The activities included in this training manual are designed to offer trainees opportunities for both individual and group work. Upon completing all activities, you will assist trainees in conducting a formative assessment known as the end learning outcome assessment. Ensure that trainees review the key reading and the points to remember section.

MODULE CODE AND TITLE: MATAAC401 ASSEMBLING MANUFACTURED PARTS OR COMPONENTS

Learning Outcome 1: Prepare workplace for assembling manufactured parts.

Learning Outcome 2: Perform assembling.

Learning Outcome 3: Carry out Finishing activities.

Learning Outcome 1: Prepare Workplace for Assembling Manufactured Parts



Indicative contents

1.1 Introduction to assembling manufactured parts /components

1.2 Organizing Workplace

1.3 Selecting tools, materials and equipment.

1.4. Applying safety measures

Key Competencies for Learning Outcome 1: Prepare Workplace for Assembling

Knowledge	Skills	Attitudes
• Description of assembling manufactured parts/components • Identification of selection criteria of tools, materials and equipment used in assembling manufactured parts/components. • Description of safety and security measures at workplace for assembling manufactured parts/components	• Selecting tools, materials and equipment used in assembling manufactured parts /components. • Applying 5S principles used in assembling manufactured parts /components. • Applying safety and security measures at workplace for assembling manufactured parts /components. • Organizing workplace assembling manufactured parts /components.	• Being attentive in applying 5S principle • Having self confidence in applying safety measures and organizing workplace • Being committed in applying safety measures • Having willingness in organizing workplace • Having self-reliance organizing workplace



Duration: 12 hrs

Learning outcome 1 objectives:



By the end of the learning outcome, the trainee will be able to:

1. Describe correctly assembling manufactured parts /components as used in assembling.
2. Describe correctly tools, materials and equipment as used assembling manufactured assembling manufactured parts /component
3. Select correctly tools, materials and equipment as used in assembling manufactured parts/components.
4. Apply appropriately 5S principles as used in as used in assembling manufactured parts/components.
5. Describe properly safety and security measures as used in assembling manufactured parts /components].
6. Apply effectively safety measures at assembling manufactured parts /components workplace.
7. Organize appropriately workplace as used in assembling manufactured parts /components.



Resources

Equipment	Tools	Materials
• Air compressor • Blower • extinguisher • spot welding machine • jigs and fixture • Welding machine • Work bench • Fume extractor	• Sign Board • Walkway • Tape Measure • Try Square • Vernier Calliper • Steel Scriber • Steel punch • Hacksaw • Chisel • Brushes	• Water • Soap • Rivets • Screws • Gaskets • Nails • Nail Saw Dust • Oxygen gas • Acetylene gas

• Electrode dryer/oven • Extension cable. • Dustpans • Oxy-acetylene gas welding equipment • Protective Gloves	• Brooms • Angle grinder • Plier • Screw drive • Phase tester • Mop • Sponges • Cloths • Bucket • Glass polishing cloths	
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Advance Preparation:

Before delivering this learning outcome, you are recommended to:

- Avail assembling equipment in good condition
- Avail PPEs and other safety equipment in good condition at workplace
- Avail manufactured parts or components
- Have manufacturing workshop to be arranged.



Indicative content 1.1: Introduction to Assembling Manufactured Parts /Components



Duration: 3 hrs



Theoretical Activity 1.1.1: Introduction to assembling manufactured parts /components



Notes to the trainer:

- Trainer may use small groups for introducing assembling manufactured parts/components.
- Images, videos, and illustrations related to assembling manufactured parts or components can also be used as didactic materials.



Key steps:

While delivering this activity, pass through the following steps:

- Step 1:** Introduce the session by asking trainees to answer the following questions.
- What do you understand by the following terms: Assembling, fastening, joining and alignment?
 - With explanation, give objectives of assembling manufactured parts/components
- Step 2:** Ask trainees to write provided answers on flipchart/paper and provides clarifications if any.
- Step 3:** Engage trainees in presentation of their findings.
- Step 4:** Provide expert view and clarify ideas by using didactic materials when necessary.
- Step 5:** Address any questions or concerns.
- Step 6:** Ask trainees to read the key reading 1.1.1. In trainee manual.



Points to Remember

- Introducing an assembly process for manufactured parts or components involves careful planning and execution.
- While describing assembling manufactured parts/components you must consider mainly definition of key terms and objectives of assembling manufactured parts/components.



Indicative content 1.2: Organizing Workplace.



Duration: 3. hrs



Practical Activity 1.1.2: Organizing workplace



Notes to the trainer

- While organizing workplace you must consider application of 5S principles; you are recommended to:
- Avail tools, materials and equipment at workplace to be arranged.



Key steps:

While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go to the manufacturing workshop and guide them in organizing workplace by applying 5S principles before performing required work.
- Step 2:** Explain the task and provide clear work instructions (Task, Time allocated).
- Step 3:** Guide trainees how to apply 5S principles at workplace.
- Step 4:** Inspect whether workplace is correctly organized and provide clarifications if any.
- Step 5:** Ask trainees to read key reading 1.2.1 and 1.2.2. in trainee manual.
- Step 6:** Ask trainees to perform the task provided in application of learning 1.2.



Points to Remember

- While organizing workplace for assembling manufactured parts or components you must focus on application of 5S principle at workplace.



Application of learning 1.2.

Ask trainees to go in manufacturing workshop to organize workplace by applying 5S for assembling manufactured parts and components used for producing ten mild steel dining tables of AB GS School.

Solution/checklist for application of learning 1.2

SN	Criteria	Indicators	Yes	No
1	Workplace is appropriately organized according to the work to be Done	Ind1. Tools, materials and equipment are sorted		
		Ind2. Tools, materials and equipment are set in order		
		Ind3. Workplace is shine		
		Ind4. Workplace is standardized		
		Ind5. Workplace is sustained		
	Total marks:			/5
	Passing line			70%



Indicative content 1.3: Selecting Tools, Materials and Equipment



Duration: 3 hrs



Practical Activity 1.3.1: Selecting tools materials and equipment



Notes to the trainer

- Facilitation of this activity can be individual based; you are requested to go in manufacturing workshop to guide trainees in selecting tools, materials and equipment to be used in assembling manufactured parts or components to make a given product, for providing required skills, you are recommended to:
- Avail organized manufacturing workshop
- Avail adequate tools, materials and equipment for metal.



Key steps:

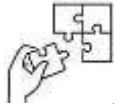
While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go in manufacturing workshop and guide them in selecting tools, materials and equipment used in producing a required product.
- Step 2:** Explain the task and provide clear work instructions (Task, Time allocated).
- Step 3:** Guide trainee to select tools, materials and equipment used in assembling mild steel dining tables.
- Step 4:** Inspect whether tools, materials and equipment are selected and provide clarifications if any.
- Step 5:** Ask trainee to read key reading 1.3.1. in trainee manual.
- Step 6:** Ask trainee to perform the task provided in application of learning 1.3.



Points to Remember

- While selecting materials you must remember to consider the products specification and application.
- While selecting materials you must consider mainly the following criteria: Material properties, cost and Budget, Performance requirements, weight and density, thermal and electrical Conductivity and Dimensional Stability
- In selecting tools and equipment, you must remember that each tool and equipment has its own function.



Application of learning 1.3.

Ask trainees to visit AM manufacturing workshop for selecting tools material and equipment required for producing stain less steel, cast iron and copper of five ovens in ABC hotel and perform the following tasks:

- i. Select tools, materials and equipment for the work

Solution/checklist for application of learning 1.3

SN	Criteria	Indicators	Yes	No
2	Equipment, tools and materials are properly identified according to the product specification.	Ind1.PPE are worn		
		Ind2.Tools are selected		
		Ind3.Materials are selected		
		Ind4.Equipment are selected		



Indicative content 1.4: Applying Safety Measures



Duration: 3. hrs



Practical Activity 1.4.1: Applying safety measures



Notes to the trainer

- Facilitation of this activity can be individual based; you are requested to go in assembling workshop and demonstrate trainees how to apply safety measures at assembling manufactured parts or components.
- Avail safety symbols and signs related to assembling manufactured parts or components.



Key steps:

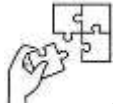
While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go to the manufacturing workshop and demonstrate trainees how to apply safety measures at workplace for assembling manufactured parts and components.
- Step 2:** Explain the task and provide clear work instructions (Task, Time allocated).
- Step 3:** Demonstrate trainees how to apply safety measures at workplace.
- Step 4:** Inspect whether safety measures are effectively applied and provide clarifications if any.
- Step 5:** Ask trainees to read key reading 1.4.1 in trainee manual.
- Step 6:** Ask trainees to perform the task provided in application of learning 1.4.



Points to Remember

- Safety measures are applied by combining of PPE, safety sign and symbols required to perform required task in safe condition.



Application of learning 1.4.

Ask your trainees to go to manufacturing workshop to apply safety measures at workplace for assembling manufactured parts and components for constructing stain less steel, cast iron and copper for five ovens of ABC hotel by doing the following.

- i. Use PPEs for metal cutting
- ii. Allocate and use fire extinguisher
- iii. Allocate safety signs and symbols in the workshop
- iv. Identify of first aid kit
- v. Control hazards

Checklist for application of learning 1.4

SN	Criteria	Indicators	Yes	No
	Safety practice are properly applied according to work Requirements	Ind1. PPEs are identified		
		Ind2. First aid kit is identified		
		Ind3. Fire extinguisher is allocated		
		Ind4. Safety signs and symbols are allocated		
		Ind5. Control hazards		
	Total marks:			/ 5
	Passing line			70%
	Decision			



Learning outcome 1 end assessment

Written assessment

1. Choose the correct answer

a. The following are objectives of assembling manufactured parts/components EXCEPT:

- i. Integration
- ii. Fit and Functionality
- iii. Efficiency
- iv. Workplace Utilization
- v. Quality Control

Answer:

iv. Workplace Utilization

b. The following are Importance of Organizing Workplace

- i. Workplace Utilization
- ii. Employee Safety
- iii. Equipment Reliability
- iv. Product Quality
- v. All above are correct answer

Answer

vi. All above are correct answer

c. One of the following is marking out tool

- i. steel ruler
- ii. Vernier caliper
- iii. scribe
- ii. Hammer
- iii. Non correct answer

Answer

iii. scribe

d. The following are types of safety signs and symbols

- i. Prohibition sign
- ii. Mandatory sign
- iii. Warning signs
- iv. All above
- v. Only `i and ii are correct answer

Answer

iv. All above

e. The following are types of assembly except:

- I. Partial Assembly
- II. Rivet Assembly
- III. Lubrication
- IV. Weld Assembly
- V. Mechanical Assembly

Answer

iii. Lubrication

f. The following equipment are used for welding.

- I. spot welding machine
- II. Oxy-acetylene gas welding
- III. A welding machine
- IV. All of the above are correct
- V. Only I and II are correct answer

Answer

IV. All of the above are correct

g. The following are applications of metal lubricant except:

- i) Lubricants are primarily used to reduce the friction between two moving surface.
- ii) Rust and corrosion inhibitors
- iii) Viscosity Index
- iv) Liquid lubricants are used in medicines
- v) Lubricants are also used as cutting fluid in cutting, grinding, drilling of metals.
- vi) Used as anti-wear, antioxidants, and antifoaming agents.

Answers:

g. iii. Viscosity Index

2. Read the following statements, and Answer by TRUE if the statement is right or FALSE if it is wrong.

- a. Alignment is the process of adjusting parts so that they are in improper relative position

Answer

False

b. The primary objective of assembling is to integrate individual parts or components into a cohesive and functional unit.

Answer

True

c. Assembling parts efficiently and effectively enables manufacturers to scale up production.

Answer

True

d. Assembling parts correctly ensures the safety of the final product.

Answer

True

e. Fastening is the most common method of joining many materials within industry either non-permanently by using fasteners.

Answer

True

f. Assembly is the putting together of different components to make a complete product.

Answer

True

g. Assembly by welding fuses to pieces of material together, usually by heating the materials and welding them.

Answer

False

h. A job hazard analysis is a technique that focuses on job tasks as a way to identify hazards after they occur.

Answer

True

- i. Joining processes are used to assemble different members to produce the desired complex configuration/geometry which is either too simple or possible to obtain through manufacturing processes

Answer

True

3. Match the types of hazards with their corresponding meaning and write correct the answers in column A.

Answer (COLUMN A)	Types of hazards (COLUMN B)	Meaning (COLUMN C)
1...	1. Fire hazards	A. refer to biological substances that pose a threat to the health of living organisms, primarily that of humans
2.....	2. Electrical Hazards	B. Include those that can have an adverse effect on an employee's mental health or wellbeing.
3.....	3. Chemical Hazards	C. can lead to long term health problems. headache and impatience are early signs of stress hazards
4.....	4. Physical Hazards:	D. hazards occurs when a person makes contact with a conductor carrying a current and simultaneously contacts the ground.
5.....	5. Biological Hazards	E. is an agent, factor or circumstance that can cause harm with or without contact
6.....	6. Stress hazards	F. are those associated with exothermic reaction
		G. is a type of occupational hazard caused by exposure to chemicals in the workplace

Answer	Types of hazards	Meaning
1...F	7. Fire hazards	H. refer to biological substances that pose a threat to the health of living organisms, primarily that of humans
2...D	8. Electrical Hazards	I. include those that can have an adverse effect on an employee's mental health or wellbeing.
3...G	9. Chemical Hazards	J. can lead to long term health problems. headache and impatience are early signs of stress hazards
4...E	10. Physical Hazards:	K. hazards occurs when a person makes contact with a conductor carrying a current and simultaneously contacts the ground.
5...A	11. Biological Hazards	L. is an agent, factor or circumstance that can cause harm with or without contact
6...C	12. Stress hazards	M. are those associated with exothermic reaction
		N. is a type of occupational hazard caused by exposure to chemicals in the workplace

4. Differentiate jigs and fixture as equipment used in assembling manufactured components or parts

Jigs	Fixtures
1. It is a work holding device that holds, supports and locates the workpiece and guides the cutting tool for a specific operation	1. It is a work holding device that holds, supports and locates the workpiece for a specific operation but does not guide the cutting tool
2. The jigs are special tools particularly in drilling, reaming, tapping and boring operation.	2. Fixtures are specific tools used particularly in milling machine, shapers and slotting machine.
3. Gauge blocks are not necessary.	3. Gauge blocks may be provided for effective handling.
4. Lighter in construction.	4. Heavier in construction.

Answer

Practical assessment

AB manufacturing company Ltd has won a tender constructing of five ovens made in stainless steel, cast iron and copper of ABC hotel. Before producing required parts and components to be used in construction of those products. You are requested to ask trainees to perform the following tasks:

- Organizing the workplace
- Selecting tools, materials and equipment for the work
- Applying safety measures

Performance criteria checklist

Assessable outcomes	Assessed criteria (Based on performance criteria)	Indicators	Observations	
			Yes	No
1. Prepare workplace for assembling manufactured parts	1.1. Workplace is appropriately organized according to the work to be done	Ind1. Safety signs are respected		
		Ind2. Safety hazards signs are respected		
		Ind3. Workplace is Organized		
	1.2. Tools, materials and	Ind1. Tools are selected		
		Ind2. materials are selected		

	Equipment are Properly selected according to work requirements	Ind3. Equipment are selected		
	1.3. Safety practice are properly applied according to work requirements	Ind1. PPEs are Worn		
		Ind2. Work surface is cleaned		
		Ind3. Safety equipment are used		
Total marks	 /100			
Passing line	70%			
Decision				

END



Further information to the trainer

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Learning Outcome 2: Perform Assembling



Indicative contents

2.1 Arranging parts for assembling

2.2 Joining parts

2.3 Checking product Specification

2.4 Testing product functionality

Key Competencies for Learning Outcome 2: Perform Assembling

Knowledge	Skills	Attitudes
• Description of joining parts techniques used for assembling manufactured parts or component.	• Arranging parts for assembling • Joining parts using bolting and riveting • Joining parts using press fitting and seaming • Joining parts using welding, soldering and brazing. • Applying adhesive bonding using heat blower for joining parts • Verifying product measurement • Testing product functionality	• Having Critical thinking while arranging parts • Having self-confident • Having time management while joining parts • Being attentive Verifying product measurement and • Testing product functionality



Duration: 50 hrs

Learning outcome 2 objectives:



By the end of the learning outcome, the trainee will be able to:

1. Describe correctly joining techniques used for assembling manufactured parts or component.
2. Join correctly parts using bolting and riveting as used for assembling manufactured parts or components.
3. Join correctly parts using press fitting and seaming as used for assembling manufactured parts or components.
4. Join properly parts using welding, soldering and brazing as used for assembling manufactured parts or components.
5. Apply correctly adhesive bonding for joining parts as used in assembling manufactured parts or components.
6. Use properly heat blower for joining parts as used in assembling manufactured parts or components.
7. Verify correctly product measurement as used for checking product specification as used in assembling manufactured parts or components.
8. Test properly product functionality as required in assembling manufactured parts or components.



Resources

Equipment	Tools	Materials
• Air compressor • Blower • extinguisher • spot welding machine • jigs and fixture • Welding machine • Work bench • Fume extractor • Electrode - dryer/oven - Extension cable • Dustpans	• Sign Board • Walkway • Tape Measure • Try Square • Vernier Calliper • Steel Scriber • Steel Punch • Hacksaw • Chisel • Brushes • Brooms • Angle Grinder • Plier	• Rivets • Screws • Gaskets • Nails • Nail Saw Dust • Oxygen gas • Acetylene gas

• Oxy-acetylene gas welding equipment • Protective Gloves	• Screw Drive • Phase Tester • Mop • Sponges • Cloths • Buckets • Glass Polishing Cloths	
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Advance Preparation:

Before delivering this learning outcome, you are recommended to:

- Avail adequate tools, materials and equipment needed for work to be done.
- Avail a well-organized workshop.
- Avail parts and components to be assembled



Indicative content 2.1: Arranging Parts for Assembling



Duration: 5 hrs



Practical Activity 2.1.1: Arranging parts for assembling



Notes to the trainer

- Facilitation of this activity can be individual based; you are requested to guide trainees how to arrange parts and components for assembling. For providing enough skills, you are recommended to:
- Avail parts or components to be assembled.



Key steps:

While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go to the manufactured workshop and guide trainees how to arrange parts for assembling manufactured parts/ components
- Step 2:** Explain the task and provide clear work instructions (Task, Time allocated).
- Step 3:** Guide trainees how to arranging parts for assembling.
- Step 4:** Inspect whether parts for assembling arranged and provide clarifications if any.
- Step 5:** Ask trainees to read key reading 2.1.1.
- Step 6:** Ask trainees to perform the task provided in application of learning 2.1.



Points to Remember

- While assembling manufactured parts or components ensure that all assembly instructions are up-to-date and clearly written. Use diagrams, flowcharts, or videos to enhance understanding
- Keep callipers, measuring tapes, and other measuring tools accessible at the assembly stations for quick dimension checks.
- Organize parts based on the assembly sequence defined in the instructions to minimize movement and streamline workflow. Keep frequently used parts and tools at easy reach—in the “golden zone if possible.



Application of learning 2.1.

Ask trainees to go manufacturing workshop to arrange produced parts and components for the ABC hotel's five ovens made of stainless steel, cast iron, and copper.

- i. Review the assembly instructions
- ii. Check part numbers and labels
- iii. Measuring dimensions
- iv. Checking for damage or defects
- v. Positioning parts

Solution/checklist for application of learning 2.1

SN	Criteria	Indicators	Yes	No
	Parts are correctly arranged according hotels ovens	Ind1. PPEs are wearing		
		Ind2. The assembly instructions are reviewed.		
		Ind3. Part numbers and labels are checked		
		Ind4. Dimensions are measured		
		Ind5. Damage or defects are checked		
		Ind6. Parts are positioned		
	Total marks:			/6
	Passing line:			70%



Indicative content 2.2: Joining Parts



Duration: 30 hrs



Practical Activity 2.2.1: Perform bolting and riveting



Notes to the trainer

- Facilitation of this activity can be individual based; you are requested to demonstrate trainees how join parts or components using bolting and riveting. For providing desired skills; you are recommended to:
- Avail safety symbols and signs related to assembling manufactured parts or components.
- Avail parts or components to be assembled.
- Avail required tools, material and equipment.



Key steps:

While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go to the manufacturing workshop and demonstrate how to join parts or components by bolting and riveting as joining techniques.
- Step 2:** Explain the task and provide clear work instructions (Task, Time allocated).
- Step 3:** Demonstrate trainees how to join parts or components by bolting and riveting.
- Step 4:** Ask to trainees to join parts or components by bolting and riveting. Monitor the activity and provide additional clarification where necessary
- Step 5:** Inspect whether parts or components are correctly joined and provide clarifications if any.
- Step 6:** Ask trainee to read key reading 2.2.1. in trainee manual.
- Step 7:** Ask trainee to perform the task provided in application of learning 2.2.1



Points to Remember

- While bolting materials choose bolts made from materials that are compatible with the parts being joined. Consider factors like tensile strength, corrosion resistance, and environment.
- Use the correct torque specifications for tightening bolts to ensure a secure joint without damaging the materials. Regularly calibrate torque wrenches.
- Tightening bolt and nut you must prevent over tightening that can cause failure of the threads.
- Choose the right rivets based on the materials and thickness of the components being joined. Again, consider types of rivets based on the joint design.



Application of learning 2.2.1

Ask trainees to go in AB manufacturing workshop for assembling manufactured parts and components and make dining tables by bolting and riveting. The frame by bolting while the top of the table must be made by riveting.

- Drill a hole in base metals to make joint
- Join frame by bolting
- Join top of table by riveting

Solution/checklist for application of learning 2.2.1.

SN	Criteria	Indicators	Yes	No
	Joining techniques are properly applied according to the required Operations	Ind1. PPEs are worn		
		Ind2. Holes are correctly drilled		
		Ind3. Table frame is bolted		
		Ind4. Table top is riveted		
	Total marks:		/4	
	Passing line		70%	
	Decision:			



Practical Activity 2.2.2: Perform press fitting and seaming



Notes to the trainer

- Facilitation of this activity can be individual based; you are requested to demonstrate trainees how to join parts or components by Press fitting and seaming, for providing enough skills; it is recommended to:
- Avail safety symbols and signs related to assembling manufactured parts or components.
- Avail parts or components to be assembled.
- Avail required tools, material and equipment.



Key steps:

While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go to the manufacturing workshop and demonstrate trainees how to join parts and components by Pressing, fitting and seaming as joining techniques. Apply safety measures at workplace.
- Step 2:** Explain the task and provide clear work instructions (Task, Time allocated).
- Step 3:** Demonstrate trainees how to join parts or components by pressing fitting and seaming.
- Step 4:** Ask to trainees to join parts or components by pressing fitting and seaming. Monitor the activity and provide additional clarification where necessary
- Step 5:** Inspect whether parts or components are correctly assembled and provide clarifications if any.
- Step 6:** Ask trainee to read key reading 2.2.2 in trainee manual.
- Step 7:** Ask trainee to perform the task provided in application of learning 2.2.



Points to Remember

- While performing press fitting ensure that parts are designed with appropriate tolerances for press-fitting to achieve a proper interference without risking damage.
- While joining parts and components by press fitting avoid to apply over pressure that can cause product breaking
- While choosing materials for seaming consider materials bond well with the seaming technique being used and avoid over hammering the joint while joining with seaming techniques.



Application of learning 2.2.2

Ask trainees to go to the manufacturing workshop for making mild steel cooking stove of AB restaurant using press fitting and seaming as joining techniques and perform the following tasks:

- i. Seam the frame of stove
- ii. Join other parts by press fitting.

Solution/checklist for application of learning 2.2.2

SN	Criteria	Indicators	Yes	No
	Joining techniques are properly applied according to the required operations	Ind1. PPEs are worn		
		Ind2. Seaming is performed		
		Ind3. Press fitting is performed		
	Total marks:	 /3		
	Passing line:	70%		



Practical Activity 2.2.3: Apply welding soldering and brazing



Notes to the trainer

- Facilitation of this activity can be individual based; you are requested to demonstrate trainees how join parts and components by welding soldering and brazing as joining techniques, For the effective delivery; it is recommended to:
- Avail safety symbols and signs related to assembling manufactured parts or components.
- Avail parts or components to be assembled.
- Avail required tools, material and equipment.



Key steps:

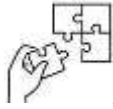
While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go to the manufacturing workshop and demonstrate trainees how to join parts or components by Welding, soldering and brazing. Apply safety measures at workplace.
- Step 2:** Explain the task and provide clear work instructions (Task, Time allocated).
- Step 3:** Demonstrate trainees how to join parts or components by welding soldering and brazing.
- Step 4:** Ask to trainees to join parts or components by Welding soldering and brazing. Monitor the activity and provide additional clarification where necessary
- Step 5:** Inspect whether parts or components are correctly assembled and provide clarifications if any.
- Step 6:** Ask trainee to read key reading 2.2.3 in trainee manual.
- Step 7:** Ask trainee to perform the task provided in application of learning 2.3.



Points to Remember

- While welding you are recommended to wear appropriate PPE for welding and work at well-ventilated area.
- When applying brazing you must take into consideration about work piece preparation and selection of brazing rod criteria.



Application of learning 2.2.3.

Ask trainees to go to the Manufacturing workshop and assemble manufactured parts and components for making modern office table using welding, brazing and soldering as joining techniques by doing the following:

- i. Make table frame and top using welding
- ii. Internal container using brazing
- iii. Handle using soldering

Solution/checklist for application of learning 2.2.3

SN	Criteria	Indicators	Yes	No	
	Joining techniques are properly applied according to the required Operations	Ind1. PPEs are worn			
		Ind2. Welding is performed			
		Ind3. Brazing is performed			
		Ind4. Soldering is performed			
	Total marks:			/ 4	
	Passing line:			70%	
	Decision:				



Practical Activity 2.2.4: Apply adhesive bonding using heat blower



Notes to the trainer

- Facilitation of this activity can be individual based; you are requested to demonstrate trainees how join parts and components by applying adhesive bonding by using heat blower, For the effective delivery; it is recommended to:
- Avail safety symbols and signs related to assembling manufactured parts or components.
- Avail parts and components to be assembled.
- Avail required tools, material and equipment.



Key steps:

While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go to the manufacturing workshop and demonstrate trainees how to join parts or components by applying adhesive bonding by using heat blower. Apply safety measures at workplace.
- Step 2:** Explain the task and provide clear work instructions (Task, Time allocated).
- Step 3:** Demonstrate trainees how to join parts or components by adhesive bonding.
- Step 4:** Ask to trainees to join parts or components by adhesive bonding. Monitor the activity and provide additional clarification where necessary
- Step 5:** Inspect whether parts or components are correctly assembled and provide clarifications if any.
- Step 6:** Ask trainee to read key reading 2.2.4.
- Step 7:** Ask trainee to perform the task provided in application of learning 2.2.



Points to Remember

- While apply adhesive bonding ensure surfaces are clean, dry, and free from contaminants like dust, oil, and grease. Use solvents or cleaners as necessary to prepare the surfaces.
- While choose the right hot melt adhesive consider the specific requirements like bond strength, open time, and intended service temperature when selecting the adhesive.
- While applying adhesive bonding you may consider kind of material to be joined.



Application of learning 2.2.4

Ask trainees to go to the BIGEZWEHO workshop and fix the glass into window frame to be used in construction of new office of sector by using adhesive bonding.

Solution/checklist for application of learning 2.2.4

SN	Criteria	Indicators	Yes	No
	Joining techniques are properly applied according to the required Operations	Ind1. PPEs are worn		
		Ind2. Heat blower is used		
		Ind3. Adhesive bonding is applied		
	Total marks:	/3		
	Passing line:	70%		



Indicative content 2.3: Checking Product Specification



Duration: 10 hrs



Practical Activity 2.3.1: Verifying of product measurement



Notes to the trainer

- Facilitation of this activity can be individual based; you are requested to guide trainees how to verify products measurement. For providing required skills you recommended to:
- Avail assembled products.



Key steps:

While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go to the manufacturing workshop and guide them in verifying product measurement (width, thickness, diagnostic, diameter, squareness and weight) while assembling manufactured components/parts.
- Step 2:** Explain the task and provide clear work instructions (Task, Time allocated).
- Step 3:** Guide trainees in verifying the product measurement in assembled product.
- Step 4:** Inspect whether products measurements are properly verified and provide clarifications if any.
- Step 5:** Ask trainee to read key reading 2.3.1.
- Step 6:** Ask trainee to perform the task provided in application of learning 2.3.1



Points to Remember

- While verifying width use precision measuring tools such as callipers, micrometres, or digital measuring devices.
- While verifying diagnostic measurements you must follow standard operating procedures for diagnostic testing and ensure that personnel are well-trained on these procedures
- While verifying product you must consider mainly: width, diagnostic squareness.



Application of learning 2.3.1

Ask trainees to go in AB manufacturing workshop company ltd for verifying the measurement of smart table of KB Guest house. Ask them to check the following measurement on finished smart table.

- i. Width
- ii. Thickness
- iii. Diagnostic
- iv. Diameter
- v. Squareness
- vi. Weight

Checklist for application of learning 2.3

SN	Criteria	Indicators	Yes	No	
	Product functionality is correctly tested according to the component specification.	Ind1. PPEs are won			
		Ind2. Width is verified			
		Ind3. Thickness is verified			
		Ind4. Diagnostic is verified			
		Ind5. Diameter is verified			
		Ind6. Squareness is verified			
		Ind7. Weight is verified			
	Total marks: 7				/
	Passing line:				70%
	Decision:				



Indicative content 2.4: Testing Product Functionality



Duration: 5 hrs



Practical Activity 2.4.1: Testing product functionality



Notes to the trainer

- Facilitation of this activity can be individual based; guide trainees how to test products functionality.
- Avail safety symbols and signs related to assembling manufactured parts or components.
- Avail assembled products.



Key steps:

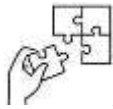
While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go to the manufacturing workshop: for design a test Plan, functional testing and Visual Inspection for assembling products.
- Step 1:** Explain the task and provide clear work instructions (Task, Time allocated).
- Step 2:** Guide trainees how to test product functionality.
- Step 3:** Inspect whether product functionality is tested verified and provide clarifications if any.
- Step 4:** Ask trainees to read key reading 2.4.1 trainee manual.
- Step 5:** Ask trainees to perform the task provided in application of learning 2.4.



Points to Remember

- While testing product functionality you must consider mainly: Design a test plan, functional testing, visual inspection of product.
- While testing product functionality, you can ensure that your product meets the required specifications, is reliable, and functions as expected.



Application of learning 2.4.

Ask trainees to go in manufacturing company ltd near the school for testing produced maize Sheller machine cooperative by performing the following tasks:

- i. Design a test plan
- ii. Functional testing
- iii. Visual inspection of product

Solution/checklist for application of learning 2.4

SN	Criteria	Indicators	Yes	No
	Product functionality is correctly tested according to the component specification.	Ind1. PPEs are worn		
		Ind2. Test plan is designed		
		Ind3. Functional testing is done		
		Ind4. Visual inspection of product		
	Total marks:		/ 3	
	Passing line		70%	



Learning Outcome 2 end assessment

1. Read the following statements, and Answer by TRUE if the statement is right or FALSE if it is wrong.

- a. Assembly instructions are systematic guides that explain how to assemble, disassemble, install or operate a product.

Answer

True

- b. Production or working drawings are specialized engineering drawings that provide information required to make the part or assembly of the initial design.

Answer

False

- c. Working drawings are the complete set of standardized drawings specifying the manufacture and assembly of a product based on its design.

Answer

True

- d. A detailed drawing is a dimensioned, drawing of a single part, describing the part's shape, size, material, and finish, in sufficient detail for the part to be manufactured based on the drawing alone.

Answer

True

- e. A sectioned assembly gives a general graphic description of the exterior shape by passing a cutting plane through all or part of the assembly.

Answer

False

- f. Sectioned assembly drawings are used for manufacturing and assembling complicated devices.

Answer

- g. Thickness is defined as the distance through an object, as distinct from width or height.

Answer

True

- h. In heat staking we use local heating and cooling to raise the temperature of plastic components and allow plastic reforming to be carried out.

Answer

True

- i. Visual inspection is a technique for detecting defects using the naked eye to ensure equipment is working improperly or that manufactured products are being made to specification.

Answer

False

- j. In manufacturing, an Inspection and Test Plan (ITP) is an inspection checklist that includes those characteristics that should be checked at each stage of the process.

Answer

True

- k. Planning is the process employed by manufacturers to create, simulate, and optimize assembly operation.

Answer

True

2. Match the Joining techniques with corresponding meaning and write the answers in column A

Answer (Column. A)	Joining techniques (Column)	meaning (Column)
1.....	1. Welding	A. This joint is made on thin metal or wires by using a solder/soldering wire (alloy of Lead and Tin) as joining medium with a melting temperature below 450°C. The melting point of soldering wire is less than the metal to be joined.
2.....	2. Seaming	B. is a method of joining metals (temporarily) by drilling a common hole in overlapped pieces and then fastening them by putting a rivet and hammering?
3.....	3. Press Fitting	C. Is a metal joining method in which the joint edges are heated and fused together to form a permanent joint with or without the application of pressure or by the application of pressure done and with or without the use of the filler metal
4.....	4. Soldering	D. is a metal joining process by drilling a common hole in overlapped pieces and then by inserting bolt and nut fastening it can be easily opened by unscrewing the nut.
5.....	5. Riveting	E. In this joint the edges of thin sheets to be joined are folded, hooked together and then pressed to form joint.

6.....	6. Brazing	F. is the process of joining multiple objects or surfaces using an adhesive material?
7.....	7. Bolting	G. is a metal joining process that uses a brass (alloy of Copper and Zinc) with a melting temperature above 4500C but below the melting temperature of the metal being joined?
		H. is a method of joining two tight-fitting parts that rely on friction?

Answer

answer	Joining techniques	Meaning
1..c	8. Welding	I. This joint is made on thin metal or wires by using a solder/soldering wire (alloy of Lead and Tin) as joining medium with a melting temperature below 4500C. The melting point of soldering wire is less than the metal to be joined.
2.. E	9. Seaming	J. is a method of joining metals (temporarily) by drilling a common hole in overlapped pieces and then fastening them by putting a rivet and hammering?
3..H	10. Press Fitting	K. Is a metal joining methods in which the joint edges are heated and fused together to form a permanent joint with or without the application of pressure or by the application of pressure done and with or without the use of the filler metal
4.. A	11. Soldering	L. is a metal joining process by drilling a common hole in overlapped pieces and then by inserting bolt and nut fastening it can be easily opened by unscrewing the nut?
5.. B	12. Riveting	M. In this joint the edges of thin sheets to be joined are folded, hooked together and then pressed to form joint.
6...G	13. Brazing	N. is the process of joining multiple objects or surfaces using an adhesive material?
7.. D	14. Bolting	O. is a metal joining process that uses a brass (alloy of Copper and Zinc) with a melting temperature above 4500C but below the melting temperature of the metal being joined?
		P. is a method of joining two tight-fitting parts that rely on friction?

3.Choose the correct answer

- a. The following are applications of Heat staking
- i. Automotive
 - ii. Medical
 - iii. IT
 - iv. multimedia and consumer electronics.
 - v. All of above

Answer

- vi. All of above

- b. The following are main types of the drawings except:
- i. outline assembly
 - ii. Detailed Drawings
 - iii. Assembly Drawings
 - iv. All above are correct answer
 - v. Only i and ii

Answer

- i. outline assembly

- c. One of the following is not Requirements to the set of drawings
- i. To completely describe the parts, both visually and dimensionally
 - ii. To show the parts in assembly
 - iii. To identify all the parts
 - iv. To specify standard parts
 - v. To position the parts

Answer

- v. To position the parts

- d. The following are Rules for sectioning assemblies
- i. Standard parts, such as fasteners, dowels, pins, and gears, and nonstandard parts, such as shafts, are not sectioned.
 - ii. Adjacent parts in section are lined at different angles, using the cast iron or other type of symbol.
 - iii. Thin parts, such as gaskets, are shown solid black. No sectioning is allowed.
 - iv. All above are correct
 - v. Non correct answer

Answer

iv. All above are correct

e. The following are types of Assembly Drawings except:

- i. An outline assembly
- ii. Assembly Drawings
- iii. A sectioned assembly
- iv. A pictorial assembly
- v. All above are correct answer

Answer

ii. Assembly Drawings

f. The following are Verification of product measurement

- i. Width
- ii. Thickness
- iii. Diagnostic Diameter
- iv. Squareness
- v. Weight
- vi. All of the above are correct

Answer

vi. All of the above are correct

g. One of the following is not steps followed while arranging parts for assembling

- i. Review the assembly instructions
- ii. Check part numbers and labels
- iii. Measuring dimensions
- iv. Presentation
- v. Checking for damage or defects
- vi. Positioning parts
- vii. Non correct answer

Answer

iv. Presentation

Practical assessment

MN fabrication workshop is a manufacturing company won tender of producing ten smart tables of 2m long and 1m width and 70cm of height. The table should be made in the following materials: top is aluminium sheet fixed with riveting; the frame is stainless steel of 40x40mm tubes by welding. Ask trainees to perform the following tasks:

- i. Arrange parts for assembling
- ii. Join parts using bolting, welding and brazing
- iii. Check product specification
- iv. Test product functionality

Performance criteria checklist

Assessable outcomes	Assessed criteria (Based on performance criteria)	Indicators	Observations	
			Yes	No
2.Perform assembling	2.1Parts are correctly arranged according to the required order.	Ind1. Assembling instructions are Respected		
		Ind2. Measurements are Respected		
		Ind3. Product component defect are checked		
	2.2. Joining techniques are properly applied according to the required operations	Ind1. Bolting is performed		
		Ind2. Welding is done		
		Ind3. Brazing is done		
	2.3. Product functionality is correctly tested according to the component specification	Ind1. Length is respected		
		Ind2. Width is respected		
		Ind3. Height is respected		
		Ind4. Diagonals are set		
		Ind5. Angles are respected		
		Ind6. The shape of structure is respected		
Total marks	/100			

Passing line	70%
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END



Further information to the trainer

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Learning Outcome 3: Carry out Finishing Activities



Indicative contents

3.1 Applying finishing techniques on assembled parts

3.2 Storing products

3.3 Reporting the work done

Key Competencies for Learning Outcome 3: Carry out Finishing Activities

Knowledge	Skills	Attitudes
• Description of forms of report	• Applying finishing by cleaning, grinding, polishing and coating on assembled parts. • Storing product using re arranging, shelving, hanging. • Reporting the work done.	• Having attention to details while applying finishing by cleaning, grinding, polishing and coating on assembled parts. • Being active while applying finishing by cleaning, grinding, polishing and coating on assembled parts. • Have team work spirit while Storing product using re arranging, shelving, hanging. • Have Self-confidence for reporting the work done. • Being attentive for applying finishing by cleaning, grinding, polishing and coating on assembled parts.



Duration: 8 hrs

Learning outcome 3 objectives:



By the end of the learning outcome, the trainee will be able to:

1. Apply correctly finishing by cleaning, grinding, polishing and coating on assembled parts or component.
2. Store correctly the products by Shelf, re-arrange and hang as used as in assembling manufactured parts or components
3. Describe correctly report form as used as in reporting the work done.
4. Generate properly report as required for reporting the work done.



Resources

Equipment	Tools	Materials
• Air Compressor • Blower • Extinguisher • Jigs and Fixture • Work Bench • Fume Extractor • Extension Cable • Painting Gun • Air Blower • Buckets • Dustpans • Protective Gloves	• Sign Board • Walkway • Tape Measure • Try Square • Vernier Calliper • steel Scriber • Steel Punch • Hacksaw • Chisel • Angle Grinder • Plier • Screw Driver • Phase Tester • Mop • Sponges • Cloths • Glass Polishing Cloths • Brushes • Brooms • Sand paper	• Water • Soap

**Advance Preparation:**

Before delivering this learning outcome, you are recommended to:

- Avail product to be finished
- Avail product to be stored.



Indicative content 3.1: Applying Finishing Techniques on Assembled Parts



Duration: 4 hrs.



Practical Activity 3.1.1: Perform cleaning, grinding, polishing and coating the assembled Product



Notes to the trainer

- Facilitation of this activity can be individual based; you are requested to demonstrate trainees how to apply finishing by cleaning, grinding, polishing and coating on assembled parts or components. For the effective delivery; you are recommended to:
- Avail safety symbols and signs related to assembling manufactured parts or components.
- Avail assembled products.



Key steps:

While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go in manufacturing workshop and demonstrate trainees how to perform the following finishing by using cleaning, grinding, polishing and coating produced smart tables.
- Step 2:** Explain the task and provide clear work instructions (Task, Time allocated).
- Step 3:** Demonstrate trainees how to perform finishing techniques following the work instruction Inspect.
- Step 4:** Facilitate trainees in performing finishing techniques.
- Step 5:** Check whether finishing techniques are correctly performed clarifications if any.
- Step 6:** Ask trainees to read key reading 3.1.1 trainee manual.
- Step 7:** Ask trainees to perform the task provided in application of learning 3.1.



Points to Remember

- While cleaning finished product determine the appropriate cleaning method based on the type of material and the level of contamination.
- When grinding product use appropriate grinding machines or tools based on the material and the desired level of finish. Consider options such as surface grinding, cylindrical grinding, or tool grinding.
- While polishing the product use polishing compounds that are compatible with the material to achieve the required finish
- While coating the Follow the manufacturer's guidelines for coating application, including thickness, curing time, and environmental conditions.



Application of learning 3.1.

Ask trainees to go in manufacturing workshop to apply finishing technics on produced 12smart tables, ten windows of X hotel by doing the following tasks.

- Cleaning the products
- Grinding products
- Polishing products
- Coating products.

SN	Criteria	Indicators	Yes	No	
	Product is appropriately Protected according to the component Properties	Ind1. PPEs are won			
		Ind2. Product is cleaned			
		Ind3. Grinding is done			
		Ind4. Polishing is done			
		Ind5. Coating is done			
	Total marks:			/5	
	Passing line			70%	
Decision:					



Indicative content 3.2: Storing Product



Duration: 2hrs



Practical Activity 3.2.1: Apply rearranging, shelving, and hanging for products



Notes to the trainer

- Facilitation of this activity can be individual based; you are requested to guide trainees how to store the product using rearranging, shelving, and hanging methods.
- Avail finished products to be stored.



Key steps:

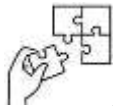
While delivering this activity, pass through the following steps:

- Step 1:** Introduce the activity and ask trainees to go in manufacturing workshop and guide trainees how to store the products.
- Step 2:** Explain the task and provide clear work instructions (Task, Time allocated).
- Step 3:** Guide trainees how to store product by rearrange, shelf and hange the product.
- Step 4:** Inspect whether products are appropriately stored and provide clarifications if any.
- Step 5:** Ask trainee to read key reading 3.2.1. in trainee manual.
- Step 6:** Ask trainee to perform the task provided in application of learning 3.2.



Points to Remember

- While storing product, arrange products in a logical and organized manner to ensure easy access and minimize clutter.
- For shelving the products choose shelving units that are sturdy, adjustable, and suitable for the product's weight and size.
- For hanging, use hanging racks or hooks to store products that are designed to be suspended, such as garments, bags, or accessories.



Application of learning 3.2.

Ask trainees to go in modern manufacturing workshop for storing finished ten windows, 12 smart tables, and six maize chiller machines by applying the following storing methods:

- i. Rearranging the product
- ii. Shelving the products
- iii. Hanging the product

Checklist for application of learning

SN	Criteria	Indicators	Yes	No
	The workplace is properly rearranged according to safety rules and waste disposal procedures	Ind1. PPEs are worn		
		Ind2. Product are rearranged		
		Ind3. Product are shelved		
		Ind4. Products are hanged		
	Total marks:		/4	
	Passing line		70%	
	Decision:			



Indicative content 3.3: Reporting the Workdone



Duration: 2 hrs



Theoretical Activity 3.3.1: Discussion about forms of report



Notes to the trainer

- Use small groups to Discuss about forms off report
- You can use some videos or picture to explain more about forms of report



Key steps:

While delivering this activity, pass through the following steps:

Step 1: Introduce the session and request trainees to respond to the following questions.

- a. Identifying forms of report
- b. Discuss on report template

Step 2: Ask any trainee to write answers provided on flipchart/paper.

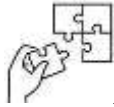
Step 3: Address any questions or concerns.

Step 4: Ask trainees to read the key reading 3.3.1 in the trainee manual.



Points to Remember

- While describing the reporting the work done you must focus to the form of report.
- In preparation of report of work done use a professional format, with a cover page, table of contents, headers, and consistent font styles
- While preparing report begin with a concise introduction outlining the purpose and scope of the report.



Application of learning 3.3.

Ask trainees to visit manufacturing workshop to prepare report of the work done in production of smart tables and chair of their district office by doing the following tasks:

- i. Prepare report
- ii. Fill up report template
- iii. Reporting the work done

SN	Criteria	Indicators	Yes	No
	Report is properly generated according to the work done	Ind1. Report is prepared		
		Ind2. Report template is filled		
		Ind3. Form of report is respected		
		Ind4. Reporting is done		
	Total marks:		/4	
	Passing line		70%	



Learning outcome 3 end assessment

Written assessment

1. Fill the sentence below with given appropriate term (cleaning, polishing, coating, grinding)
- a) is a finishing method that uses an abrasive material to smooth surfaces.
 - b) is machining process that's used to remove material from a workpiece via a grinding wheel.
 - c) is a process of removing dirt on the surface
 - d) is the process of changing the surface of a substrate by covering it with thin layers of another metal such as zinc, nickel, chromium or cadmium.

Answer

- a) Polishing
- b) Grinding
- c) Cleaning
- d) coating

2. Read the following statement and underline the correct answer

The following are storing methods except:

- a) Re-arranging
- b) Shelving
- c) Coating
- d) Hanging
- e) cleaning

Answer

- f) Re-arranging
- g) Shelving
- h) Coating
- i) Hanging
- j) cleaning

3. Answer by true or false

- a) A report is a document that presents relevant business information in an organized and understandable format.

Answer:

True

- b) A work report is a difficult and cohesive document that outlines the fundamental activities and tasks conducted by an employee throughout the day, week, month, quarter, year, or any time period mandated by the management of the company or organization.

Answer

False

- c) Periodic report these are prepared and presented at an irregular interval in the usual routine of business.

Answer

False

- d) The written report is a visual aid to communication. a written report is always preferred because the writer tries to present the data accurately and precisely.

Answer

True

4. Formal reports can be categorized into three types differentiate them.

- i. **Periodic report:** these are prepared and presented at a regular interval in the usual routine of business. They may be presented annually, half year, quartely, monthly, weekly or even daily.
- ii. **Informative report:** if a report merely presents facts pertinent to an issue or situation, it is an informative .it contains only data collected or the facts observed in an organised form .it does not contain any conclusion or recommendations.it is useful because it presents relevant data put together in a form in which it is which it is required by the management to take decisios
- iii. **Interpretative report:** an interpretative report like i
- iv. nformational report contains facts but it also includes an evaluation or interpretation or analysis of data and the reporter's conclusions. It may have recommendations for actions.

Practical assessment

ALPHA manufacturing company is metal fabrication company located in Kicukiro district have worn a tender of producing ten kitchen cooking stoves of KTA hotel made of mild steel and stainless-steel materials after assembling required parts and components of those products. Chef of technician in ALPHA manufacturing company ask you to perform the following tasks in four hours

- i. Apply the following finishing techniques cleaning, grinding, polishing, coating on those products
- ii. Store product tools and equipment
- iii. Reporting the work done

Performance criteria checklist

Assessable outcomes	Assessed criteria (Based on performance criteria)	Indicators	Observations	
			Yes	No
3.Carry out finishing activities	3.1: Product is appropriately Protected according to the component properties	Ind1. Product is properly Cleaned		
		Ind2. Product is properly Ground		
		Ind3. Product is properly Polished		
		Ind4. Filler pasting is properly applied		
		Ind5. Painting is properly applied		
	3.2. The workplace is properly rearranged according to safety rules and waste disposal procedures	Ind1. Re-arranging is properly done		
		Ind2. Shelving is properly done		
		Ind3. Hanging is properly done		
	3.3. Report is properly generated according to the work done	Ind1. Repport is done		
		Ind2. Report template is respected		
		Ind3. Elements of report is properly respected		
		Ind3. Elements of report is properly respected		
Total marks	 /100			
Passing line	70%			



Further information to the trainer

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END



October, 2024