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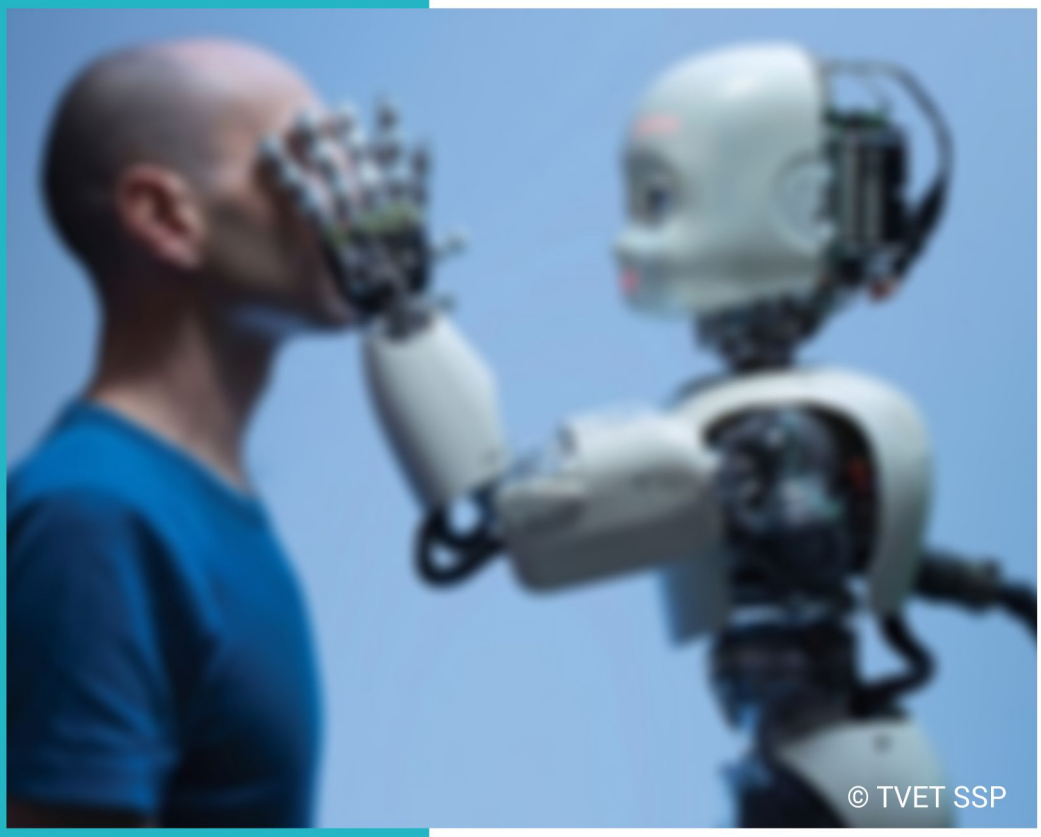
ROBOTICS TECHNICIAN



ASSESSMENT PACKAGE

National Vocational Certificate Level 2

Version 1 - October, 2019

NAVTTC

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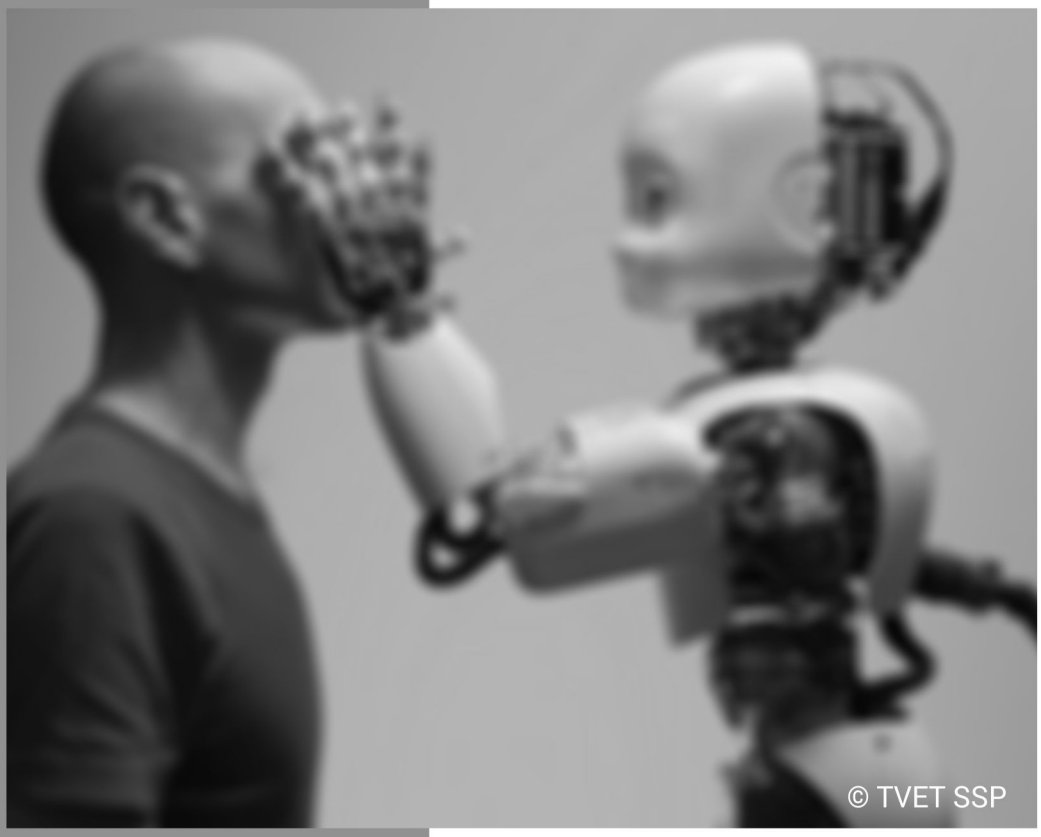
Document Version
October, 2019
Islamabad, Pakistan

ROBOTICS TECHNICIAN



ASSESSMENT PACKAGE

National Vocational Certificate Level 2

Version 1 - October, 2019

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate Level1 -4 Robotics Technician
Competency Standards	**0714001055 Identify security arrangements for robotics equipment**
Assessment Task	1. Make a list to identify security protocols and perform the procedure of checking security protocols and make a comparison with old data. 2. Provide all parameters of Robot performance record for last week in in the format given in **Annexure-A**. 3. Knowledge assessment (Oral)

I can……..

Performance Criteria	**Yes**	**No**
1. Keep performance records timely and relevant.		
2. Acknowledge both positives and negatives of the recorded activities.		
3. Keep the logs factual and detailed.		
4. Create a sense of continuity and consistency while maintaining logs.		
5. Identify relevant security protocols as per standard operating procedures.		
6. Follow instructions as per standard operating procedures.		
7. Check whether security logs are followed as per standard operating procedures		
8. Assess current security performance		
9. Identify gaps in current security protocols		
10. Formulate and report security solutions to supervisor		

Candidate's Signature_____ Assessor's Signature_____

Date: _____

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate Level 1 -4 ROBOTICS TECHNICIAN
Competency Standard(s)	**0714001055 Identify security arrangements for robotics equipment**

Assessors Judgment Guide

Qualification	National Vocational Certificate Level1 -4 ROBOTICS TECHNICIAN
Competency Standard(s)	**Identify security arrangements for robotics equipment**
Candidate Details Guidance for Candidate **Assessment Outcome**	**To meet this standard, you are required to complete the following within the given timeframe (for practical demonstration & assessment):** 1. Make a list to identify security protocols and perform the procedure of checking security protocols and make a comparison with old data. 2. Provide all parameters of Robot performance record for last week in the format given in **Annexure-A**. 3. Knowledge assessment (Oral) **Assessor's code:** _____
Time: 3 Hrs.	During a practical assessment, under observation by an assessor, you are required to identify and perform security protocols demonstrating the following criteria:
Minimum Evidence Required	1. Keep performance records timely and relevant. 2. Acknowledge both positives and negatives of the recorded activities. 3. Keep the logs factual and detailed. 4. Create a sense of continuity and consistency while maintaining logs. 5. Identify relevant security protocols as per standard operating procedures. 6. Follow instructions as per standard operating procedures. 7. Check whether security logs are followed as per standard operating procedures 8. Assess current security performance 9. Identify gaps in current security protocols 10. Formulate and report security solutions to supervisor

Assessment Summary (to be filled by the assessor)							
Activity	**Method**					**Result**	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment		✓					
Other Requirement							

Observation Checklist

Assessment Task	1. Make a list to identify security protocols and perform the procedure of checking security protocols and make a comparison with old data. 2. Provide all parameters of Robot performance record for last month in the format given in **Annexure-A**. 3. Knowledge assessment (Oral)

During the practical assessment, candidate demonstrated the following:		**Yes**	**No**	**Remarks**
1.	Kept performance records timely and relevantly.			
2.	Acknowledged both positives and negatives of the recorded activities.			
3.	Kept the logs factual and detailed.			
4.	Created a sense of continuity and consistency while maintaining logs.			
5.	Identified relevant security protocols as per standard operating procedures.			
6.	Followed instructions as per standard operating procedures.			
7.	Checked whether security logs are followed as per standard operating procedures			
8.	Assessed current security performance			
9.	Identified gaps in current security protocols			
10.	Formulated and report security solutions to supervisor			
Competent ☐		**Not Yet Competent** ☐		

Feedback to the Candidate
Candidate's Signature_____Assessor'sSignature_____

Annexure A

Sr.#	Robot Model	Robot Type	Robot operational time	Date	Error	Error Type	Alarm	Alarm Type
01								
02								
03								
04								
05								
06								
07								

Identify security arrangements for robotics equipment

Knowledge Assessment

Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standard(s)	**0714001055 Identify security arrangements for robotics equipment**
Candidate Details	Name: _____ Registration/Roll Number: _____ Candidate Signature: _____
Assessment Outcome	**COMPETENT** ☐ **NOT YETCOMPETENT** ☐ Name of the Assessor:_____Assessor's code:_____ Signature of the Assessor:_____

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

	Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	**Satisfactory**	**Not Satisfactory**
1.	*How we can keep the data of Robotic System?*		
	Candidate's response		
2.	*What is the importance of consistency in maintaining log?*		
	Candidate's response		
3.	*What is the purpose of security protocols?*		
	Candidate's response		
4.	*Why we use standard operating procedures?*		
	Candidate's response		
5.	*How we can identify gaps in current security protocols?*		
	Candidate's response		

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate Level-2 in Robotics Technician
Competency Standards	0714001056 Operate Robots at Workplace
Assessment Task	Perform pre and post-operative test as per standard operating procedure. Also ensure suitability of workplace for testing.

I can…….

Performance Criteria	**Yes**	**No**
1. Ensure proper connectivity of all components according to instructions	☐	☐
2. Check initial power indicators	☐	☐
3. Perform basic calibration of robot	☐	☐
4. Perform test run	☐	☐
5. Identify suitable work environment for the robot.	☐	☐
6. Identify obstacles that effects robot operations	☐	☐
7. Prepare suitable work environment for the robot.	☐	☐
8. Ensure safety for the robotic equipment.	☐	☐
9. Identify the standard operating procedure for the robot.	☐	☐
10. Follow instruction as given in standard operating procedure while operating the robot	☐	☐
11. Ensure proper functioning of the given robot.	☐	☐
12. Recognize appropriate post operation test for the particular robot	☐	☐
13. Follow standard operating procedure to perform post operation test	☐	☐

Candidate's Signature_____ Assessor's Signature_____

Date: _____

Instruction Sheet for the Candidate

Operate Robots at Workplace

National Vocational Certificate Level-2 in Robotics Technician

Qualification	National Vocational Certificate Level-2 in Robotics Technician
Competency Standard(s)	0714001056 Operate Robots at Workplace

Candidate Details	Name_____ Registration/Roll Number_____
Guidance for Candidate	**To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):** 1. Perform pre and post-operative test as per standard operating procedure. Also ensure suitability of workplace for testing.
Time: 3 hrs.	During a practical assessment, under observation by an assessor, you are required to perform pre and post-operative test as per standard operating procedure. Also ensure suitability of workplace for testing. You are required to demonstrate the following criteria:
Minimum Evidence Required	1. Ensure proper connectivity of all components according to instructions 2. Check initial power indicators 3. Perform basic calibration of robot 4. Perform test run 5. Identify suitable work environment for the robot. 6. Identify obstacles that effects robot operations 7. Prepare suitable work environment for the robot. 8. Ensure safety for the robotic equipment. 9. Identify the standard operating procedure for the robot. 10. Follow instruction as given in standard operating procedure while operating the robot 11. Ensure proper functioning of the robot. 12. Recognize appropriate post operation test for the particular robot 13. Follow standard operating procedure to perform post operation test

Assessors Judgment Guide

Qualification	National Vocational Certificate Level-2 in Robotics Technician
Competency Standard(s)	Operate Robots at Workplace
Candidate Details	Name: _____ Registration/Roll Number: _____ Signature: _____
Assessment Outcome	COMPETENT ☐ NOT YET COMPETENT ☐ Name of the Assessor_____ Assessor's code: _____ Signature:_____

Assessment Summary (to be filled by the assessor)							
Activity	**Method**					**Result**	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment		✓					
Other Requirement							

Observation Checklist

Assessment Task	Perform pre and post-operative test as per standard operating procedure. Also ensure suitability of workplace for testing.

	During the practical assessment, candidate demonstrated the following:	**Yes**	**No**	**Remarks**
1.	Ensure proper connectivity of all components according to instructions			
2.	Check initial power indicators			
3.	Perform basic calibration of robot			
4.	Perform test run			
5.	Identify suitable work environment for the robot.			
6.	Identify obstacles that effects robot operations			
7.	Prepare suitable work environment for the robot.			
8.	Ensure safety for the robotic equipment.			
9.	Identify the standard operating procedure for the robot.			
10.	Follow instruction as given in standard operating procedure while operating the robot			
11.	Ensure proper functioning of the robot.			
12.	Recognize appropriate post operation test for the particular robot			
13.	Follow standard operating procedure to perform post operation test			

Competent ☐	**Not Yet Competent** ☐

Knowledge Assessment

Qualification	National Vocational Certificate Level-2 in Robotics Technician
Competency Standard(s)	Operate Robots at Workplace
Candidate Details	Name: _____ Registration/Roll Number: _____ Candidate Signature: _____
Assessment Outcome	COMPETENT ☐ NOT YET COMPETENT ☐ Name of the Assessor: _____ Assessor's code: _____ Signature of the Assessor:_____

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		**Satisfactory**	**Not Satisfactory**
1.	*How to make environment suitable for robotic operation?*		
	Candidate's response		
2.	*What are pre-operative tests for the given robot?*		
	Candidate's response		
3.	*What are post-operative tests for the given robot?*		
	Candidate's response		
4.	*What are common environmental hazardous?*		
5.	*What are the important connection needed for given robot?*		
6.			
7.			

Feedback to the Candidate
Candidate's Signature_____ **Assessor's Signature** _____

Knowledge Assessment

Qualification	National Vocational Certificate Level-2 in Robotics Technician
Competency Standard(s)	0714001056 Operate Robots at Workplace
Candidate Details	Name: _____ Registration/Roll Number: _____ Candidate Signature: _____
Assessment Outcome	COMPETENT ☐ NOT YET COMPETENT ☐ Name of the Assessor: _____ Assessor's code: _____ Signature of the Assessor: _____

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		**Satisfactory**	**Not Satisfactory**
1.	*How to make environment suitable for robotic operation?*		
	Candidate's response		
2.	*What are pre-operative tests for the given robot?*		
	Candidate's response		
3.	*What are post-operative tests for the given robot?*		
	Candidate's response		
4.	*What are common environmental hazardous?*		
5.	*What are the important connections needed for given robot?*		
6.			
7.			
8.			

9.			
10.			

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate ROBOTICS TECHNICIAN Level1 -4
Competency Standards	**0714001057 Distinguish equipment/components for assembling purpose**
Assessment Task	**Collect & arrange the following tools & components and create workspace environment for robotic assembly.** • **Hammer, Screwdrivers & Wrenches, Saw, Square, measuring tape, Vernier calipers, Files, Centre Punch, Drill Press, Hobby Tool, soldering station, wires stripper, Sharp utility knifes, Hot glue guns, Arc Welder, Electric Heat Gun, Safety Goggles, connecting wire, Gripper (end effector), hydraulic base linear actuator, servo motor (rotatory actuator), controller module, IR Sensor (Infrared Sensor), Ultrasonic Sensor**

I can……..

Performance Criteria	**Yes**	**No**
1. List all assembly components	☐	☐
2. Distinguish between different types of components based on various traits.	☐	☐
3. Label components	☐	☐
4. Know about components from user manual	☐	☐
5. Identify order of assembly	☐	☐
6. Recognize required components	☐	☐
7. Arrange components according to identified order	☐	☐
8. List different types of tools	☐	☐
9. Select appropriate tools for assembly	☐	☐
10. Arrange tools according to identified order	☐	☐
11. Check space availability	☐	☐
12. Arrange racks for the equipment	☐	☐
13. Place components based on functionality	☐	☐
14. Ensure safety measures	☐	☐
15. Ensure availability of consumables	☐	☐
16. Ensure backup power source	☐	☐

Candidate's Signature_____ Assessor's Signature_____

Date: _____

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standard(s)	**0714001057 Distinguish equipment/components for assembling purpose**

Candidate Details	Name_____ Registration/Roll Number_____
Guidance for Candidate	**To meet this standard, you are required to complete the following within the given time frame of 3 hours (for practical demonstration & assessment):** **Collect & arrange the following tools & components and create workspace environment for robotic assembly.** • **Hammer, Screwdrivers & Wrenches, Saw, Square, measuring tape, Vernier calipers, Files, Centre Punch, Drill Press, Hobby Tool, soldering station, wires stripper, Sharp utility knifes, Hot glue guns, Arc Welder, Electric Heat Gun, Safety Goggles, connecting wire, Gripper (end effector), hydraulic base linear actuator, servo motor (rotatory actuator), controller module, IR Sensor (Infrared Sensor), Ultrasonic Sensor**
Time: 3 hrs.	During a practical assessment, under observation by an assessor, you are required to perform the above tasks demonstrating the following criteria:
Minimum Evidence Required	1. List all assembly components 2. Distinguish between different types of components based on various traits. 3. Label components 4. Know about components from user manual 5. Identify order of assembly 6. Recognize required components 7. Arrange components according to identified order 8. List different types of tools 9. Select appropriate tools for assembly 10. Arrange tools according to identified order 11. Check space availability 12. Arrange racks for the equipment 13. Place components based on functionality 14. Ensure safety measures 15. Ensure availability of consumables 16. Ensure backup power source

Assessors Judgment Guide

Qualification	National Vocational Certificate ROBOTICS TECHNICIAN Level1 -4

Competency Standard(s)	Distinguish equipment/components for assembling purpose
Candidate Details	Name: _____ Registration/Roll Number: _____Signature: _____
Assessment Outcome	**COMPETENT** ☐ **NOT YETCOMPETENT** ☐ **Name of the Assessor**_____**Assessor's code:** _____ **Signature:** _____

Assessment Summary (to be filled by the assessor)							
Activity	**Method**					**Result**	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment		✓					
Other Requirement							

Observation Checklist

Assessment Task	1. **Collect & arrange the following tools & components and create workspace environment for robotic assembly.** • **Hammer, Screwdrivers & Wrenches, Saw, Square, measuring tape, Vernier calipers, Files, Centre Punch, Drill Press, Hobby Tool, soldering station, wires stripper, Sharp utility knifes, Hot glue guns, Arc Welder, Electric Heat Gun, Safety Goggles, connecting wire, Gripper (end effector), hydraulic base linear actuator, servo motor (rotatory actuator), controller module, IR Sensor (Infrared Sensor), Ultrasonic Sensor**

During the practical assessment, candidate demonstrated the following:		**Yes**	**No**	**Remarks**
1.	Listed all assembly components			
2.	Distinguished between different types of components based on various traits.			
3.	Labelled components			
4.	Knew about components from user manual			
5.	Identified order of assembly			
6.	Recognized required components			
7.	Arranged components according to identified order			
8.	Listed different types of tools			
9.	Selected appropriate tools for assembly			
10.	Arranged tools according to identified order			
11.	Checked space availability			
12.	Arranged racks for the equipment			
13.	Placed components based on functionality			
14.	Ensured safety measures			
15.	Ensured availability of consumables			
16.	Ensured backup power source			
Competent ☐		**Not Yet Competent** ☐		

Feedback to the Candidate
Candidate's Signature_____Assessor's Signature_____

Knowledge Assessment

Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standard(s)	0714001057 Distinguish equipment/components for assembling purpose
Candidate Details	Name: _____ Registration/Roll Number: _____ Candidate Signature: _____
Assessment Outcome	**COMPETENT** ☐ **NOT YETCOMPETENT** ☐ Name of the Assessor: _____Assessor's code: _____ Signature of the Assessor: _____

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		**Satisfactory**	**Not Satisfactory**
1.	Enlist basic mechanical/Electrical tools used for robotic assembly?		
2.	Define Manipulator?		
3.	Define Actuator?		
4.	What is End effector?		
5.	Define Locomotion?		

6.	Define Controller?		
7.	Define Sensors?		
8.	Define safety measure?		
9.			
10.			

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate Level 1 – 4 Robotics Technician
Competency Standards	0714001058 Do component testing for robotics
Assessment Task	• Create testing criteria for given project • Identify components and testing procedures • List and Follow SOP's • Collect, compile and validate test reports • Prepare report on performance and component faults parameters • Perform calibration test according to instruction • Report calibration status of the testing equipment

I can…….

Performance Criteria	**Yes**	**No**
1. Identify work bench components		
2. Identify testing criteria according to given standard		
3. Follow instructions to prepare test bench		
4. Identify components that requires testing		
5. Identify relevant testing procedures		
6. List SOPs according to testing criteria		
7. Follow SOPs to perform component tests		
8. Identify and log different performance parameters		
9. Ensure safety parameters while component testing		
10. Collect and compile test results		
11. Validate test results		
12. Identify relevant templates for report writing		
13. Prepare report on performance parameters		
14. Prepare report on component faults		
15. Report recommended solutions		
16. Identify absolute instrument for calibration		
17. Identify Calibration parameters		
18. Perform calibration test according to instructions		
19. Compare calibration status with the instruction's manual		
20. Report calibration status of the testing equipment		

Candidate's Signature_____Assessor's Signature_____

Date: _____

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standard(s)	0714001058 Do component testing for robotics

Candidate Details	Name_____ Registration/Roll Number_____
Guidance for Candidate	**To meet this standard, you are required to complete the following within the given timeframe (for practical demonstration & assessment):** • Create testing criteria for given project • Identify components and testing procedures • List and Follow SOP's • Collect, compile and validate test reports • Prepare report on performance and component faults parameters • Perform calibration test according to instruction • Report calibration status of the testing equipment
Time: 30 min	During a practical assessment, under observation by an assessor, you are required to perform the above task **,** demonstrating the following criteria:
Minimum Evidence Required	1. Identify work bench components 2. Identify testing criteria according to given standard 3. Follow instructions to prepare test bench 4. Identify components that requires testing 5. Identify relevant testing procedures 6. List SOPs according to testing criteria 7. Follow SOPs to perform component tests 8. Identify and log different performance parameters 9. Ensure safety parameters while component testing 10. Collect and compile test results 11. Validate test results 12. Identify relevant templates for report writing 13. Prepare report on performance parameters 14. Prepare report on component faults 15. Report recommended solutions 16. Identify absolute instrument for calibration 17. Identify Calibration parameters 18. Perform calibration test according to instructions 19. Compare calibration status with the instructions manual 20. Report calibration status of the testing equipment

Assessors Judgment Guide

Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standard(s)	Do component testing for robotics
Candidate Details	Name:_____ Registration/Roll Number: _____Signature: _____
Assessment Outcome	**COMPETENT** ☐ **NOT YETCOMPETENT** ☐ **Name of the Assessor**_____**Assessor's code:** _____ **Signature:** _____

Assessment Summary (to be filled by the assessor)								
Activity	**Method**					**Result**		
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment		✓					
Other Requirement							

Observation Checklist

Assessment Task	Do the following tasks for the given project: • Create testing criteria for given project • Identify components and testing procedures • List and Follow SOP's • Collect, compile and validate test reports • Prepare report on performance and component faults parameters • Perform calibration test according to instruction • Report calibration status of the testing equipment

	During the practical assessment, candidate demonstrated the following:	**Yes**	**No**	**Remarks**
1.	Identify work bench components			
2.	Identify testing criteria according to given standard			
3.	Follow instructions to prepare test bench			
4.	Identify components that requires testing			
5.	Identify relevant testing procedures			
6.	List SOPs according to testing criteria			
7.	Follow SOPs to perform component tests			
8.	Identify and log different performance parameters			
9.	Ensure safety parameters while component testing			
10.	Collect and compile test results			
11.	Validate test results			
12.	Identify relevant templates for report writing			
13.	Prepare report on performance parameters			
14.	Prepare report on component faults			
15.	Report recommended solutions			
16.	Identify absolute instrument for calibration			
17.	Identify Calibration parameters			
18.	Perform calibration test according to instructions			
19.	Compare calibration status with the instruction's manual			
20.	Report calibration status of the testing equipment			

Competent ☐ **Not Yet Competent** ☐

Feedback to the Candidate
Candidate's Signature_____**Assessor's Signature**_____

Knowledge Assessment

Qualification	National Vocational Certificate Level1 -4 Robotics Technician
Competency Standard(s)	0714001058 Do component testing for robotics
Candidate Details	Name:_____ Registration/Roll Number: _____ Candidate Signature:_____
Assessment Outcome	**COMPETENT** ☐ **NOT YETCOMPETENT** ☐ Name of the Assessor:_____ Assessor's code:_____ Signature of the Assessor:_____

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

	Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	**Satisfactory**	**Not Satisfactory**
1.	*What is Component Testing?*		
2.	*How do we identify the testing criteria and testing procedure?*		
3.	*What is Validation and how do we validate the test results?*		
4.	*What is Calibration?*		
5.	*How to perform calibration test?*		
6.			
7.			
8.			

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate Level1 -4 Robotics Technician
Competency Standards	**0714001059 Un Deploy robot at workplace**
Assessment Task	Given a deployed robotic system, • Candidate is required to un deploy the robotic system by following standard procedure and • Transport the robotic systems for proper storage.

I can…….

Performance Criteria	**Yes**	**No**
1. Identify procedure for shutting down of robot.	☐	☐
2. Follow steps provided in standard operating manual.	☐	☐
3. Ensure safety standards during the procedure.	☐	☐
4. Identify tools and equipment required for undeployment	☐	☐
5. Arrange tools and equipment required	☐	☐
6. Ensure suitability of workplace for undeployment	☐	☐
7. Identify uninstallation procedure for robot from installation manual.	☐	☐
8. Follow standard procedure to uninstall the robot	☐	☐
9. Ensure safety of robotic components while uninstalling	☐	☐
10. Identify packaging requirement of components	☐	☐
11. Ensure proper packaging of components	☐	☐
12. Arrange components for transportation and storage.	☐	☐
13. Identify mode of transportation.	☐	☐
14. Ensure safe loading /unloading of the robotic components	☐	☐
15. Ensure appropriate storage environment for components	☐	☐

Candidate's Signature_____ Assessor's Signature_____

Date: _____

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standard(s)	**0714001059 Un Deploy robot at workplace**

Candidate Details	Name_____ Registration/Roll Number_____
Guidance for Candidate	**To meet this standard, you are required to complete the following within the giventimeframe (for practical demonstration & assessment):** **Given a deployed robotic system:** 1. Candidate is required to un deploy the robotic system by following standard procedure and 2. Transport the robotic systems for proper storage. 3. Knowledge assessment (Oral)
Time: 3 hrs.	During a practical assessment, under observation by an assessor, you are required to **un-deploy a robotic system** demonstrating the following criteria:
Minimum Evidence Required	1. Identify procedure for shutting down of robot. 2. Follow steps provided in standard operating manual. 3. Ensure safety standards during the procedure. 4. Identify tools and equipment required for undeployment 5. Arrange tools and equipment required 6. Ensure suitability of workplace for undeployment 7. Identify uninstallation procedure for robot from installation manual. 8. Follow standard procedure to uninstall the robot 9. Ensure safety of robotic components while uninstalling 10. Identify packaging requirement of components 11. Ensure proper packaging of components 12. Arrange components for transportation and storage. 13. Identify mode of transportation. 14. Ensure safe loading /unloading of the robotic components 15. Ensure appropriate storage environment for components

Assessors Judgment Guide

Qualification	National Vocational Certificate ROBOTICS TECHNICIAN Level1 -4
Competency Standard(s)	Un Deploy robot at workplace
Candidate Details	Name:_____ Registration/Roll Number: _____Signature: _____
Assessment Outcome	**COMPETENT** ☐ **NOT YETCOMPETENT** ☐ **Name of the Assessor**_____**Assessor's code:**_____ **Signature:**_____

Assessment Summary (to be filled by the assessor)							
Activity	**Method**					**Result**	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment		✓					
Other Requirement							

Observation Checklist

Assessment Task	**Given a deployed robotic system:** 1. Candidate is required to un deploy the robotic system by following standard procedure and 2. Transport the robotic systems for proper storage.

	During the practical assessment, candidate demonstrated the following:	**Yes**	**No**	**Remarks**
1.	Identified procedure for shutting down of robot.			
2.	Followed steps provided in standard operating manual.			
3.	Ensured safety standards during the procedure.			
4.	Identified tools and equipment required for undeployment			
5.	Arranged tools and equipment required			
6.	Ensured suitability of workplace for undeployment			
7.	Identified uninstallation procedure for robot from installation manual.			
8.	Followed standard procedure to uninstall the robot			
9.	Ensured safety of robotic components while uninstalling			
10.	Identified packaging requirement of components			
11.	Ensured proper packaging of components			
12.	Arranged components for transportation and storage.			
13.	Identified mode of transportation.			
14.	Ensured safe loading /unloading of the robotic components			
15.	Ensured appropriate storage environment for components			

Competent ☐	**Not Yet Competent** ☐

Feedback to the Candidate
Candidate's Signature_____Assessor's Signature_____

Knowledge Assessment

Qualification	National Vocational Certificate Level1 -4 ROBOTICS TECHNICIAN
Competency Standard(s)	0714001059 Un Deploy robot at workplace
Candidate Details	Name:_____ Registration/Roll Number: _____ Candidate Signature:_____
Assessment Outcome	**COMPETENT** ☐ **NOT YETCOMPETENT** ☐ Name of the Assessor:_____Assessor's code:_____ Signature of the Assessor:_____

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		**Satisfactory**	**Not Satisfactory**
1.	How to properly shutdown a robotic systems for undeployment?		
2.	What safety standards should be ensured during the procedure?		
3.	What tools and equipment are required for undeployment?		
4.	How to determine suitability of workplace for undeployment?		
5.	How to uninstall the robot?		

6.	What safety measures should be considered while uninstalling robot?		
7.	How to properly package robotic components?		
8.	How to transport and store robotic component?		
9.	How to safely load/unload robotic components?		
10.	What is an appropriate storage environment for components?		

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standards	0714001060 De-commission robot at workplace
Assessment Task	**Given a specific robotic system:** • Candidate is required to perform decommissioning of the robotic system as per decommissioning manual. • Candidate is also required to disassemble the robotic systems as per standard operating procedure and label and store components of the robotic systems. • Candidate the achieve all of the above while following environment, health and safety guidelines.

I can…….

Performance Criteria	**Yes**	**No**
1. Identify disassembling requirements	☐	☐
2. Perform pre-decommissioning checks such as Environment, health and safety (EHS).	☐	☐
3. Select appropriate tools for disassembling of robot.	☐	☐
4. Identify order of disassembling	☐	☐
5. Detach connections effectively	☐	☐
6. Follow the standard operating procedure for disassembling of robot	☐	☐
7. Identify reusable and repairable components.	☐	☐
8. Sort reusable and repairable components.	☐	☐
9. Label reusable and repairable components.	☐	☐
10. Ensure that the component is not usable or repairable.	☐	☐
11. Identify EHS procedure for dispose of discarded components	☐	☐
12. Ensure proper disposal of discarded components	☐	☐

Candidate's Signature_____ Assessor's Signature_____

Date: _____

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standard(s)	0714001060 De-commission robot at workplace

Candidate Details	Name_____ Registration/Roll Number_____
Guidance for Candidate	**To meet this standard you are required to complete the following within the giventimeframe (for practical demonstration & assessment):** **Given a specific robotic system:** 1. Candidate is required to perform decommissioning of the robotic system as per decommissioning manual. 2. Candidate is also required to disassemble the robotic systems as per standard operating procedure and label and store components of the robotic systems. 3. Candidate the achieve all of the above while following environment, health and safety guidelines. 4. Knowledge assessment (Oral)
Time: 3 Hrs. Minimum Evidence Required	During a practical assessment, under observation by an assessor, you are required to **decommission a robotic system** demonstrating the following criteria: **1.** Identify disassembling requirements **2.** Perform pre-decommissioning checks such as Environment, health and safety (EHS). **3.** Select appropriate tools for disassembling of robot. **4.** Identify order of disassembling **5.** Detach connections effectively **6.** Follow the standard operating procedure for disassembling of robot **7.** Identify reusable and repairable components. **8.** Sort reusable and repairable components. **9.** Label reusable and repairable components. **10.** Ensure that the component is not usable or repairable. **11.** Identify EHS procedure for dispose of discarded components **12.** Ensure proper disposal of discarded components

Assessors Judgment Guide

Qualification	National Vocational Certificate Level1 -4 Robotics Technician
Competency Standard(s)	De-commission robot at workplace

Candidate Details	Name: _____ Registration/Roll Number: _____Signature: _____
Assessment Outcome	**COMPETENT** ☐ **NOT YETCOMPETENT** ☐ **Name of the Assessor**_____**Assessor's code:** _____ **Signature:** _____

Assessment Summary (to be filled by the assessor)							
Activity	**Method**					**Result**	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment		✓					
Other Requirement							

Observation Checklist

Assessment Task	**Given a specific robotic system:** 1. Candidate is required to perform decommissioning of the robotic system as per decommissioning manual. 2. Candidate is also required to disassemble the robotic systems as per standard operating procedure and label and store components of the robotic systems. 3. Candidate the achieve all of the above while following environment, health and safety guidelines. 4. Knowledge assessment (Oral)

	During the practical assessment, candidate demonstrated the following:	**Yes**	**No**	**Remarks**
1.	Identified disassembling requirements			
2.	Performed pre-decommissioning checks such as Environment, health and safety (EHS).			
3.	Selected appropriate tools for disassembling of robot.			
4.	Identified order of disassembling			
5.	Detached connections effectively			
6.	Followed the standard operating procedure for disassembling of robot			
7.	Identified reusable and repairable components.			
8.	Sorted reusable and repairable components.			
9.	Labeled reusable and repairable components.			
10.	Ensured that the component is not usable or repairable.			
11.	Identified EHS procedure for dispose of discarded components			
12.	Ensured proper disposal of discarded components			

Competent ☐	**Not Yet Competent** ☐

Feedback to the Candidate
Candidate's Signature_____Assessor's Signature_____

Knowledge Assessment

Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standard(s)	0714001060 De-commission robot at workplace
Candidate Details	Name: _____ Registration/Roll Number: _____ Candidate Signature: _____
Assessment Outcome	**COMPETENT** ☐ **NOT YETCOMPETENT** ☐ Name of the Assessor:_____Assessor's code:_____ Signature of the Assessor:_____

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		**Satisfactory**	**Not Satisfactory**
1.	What is decommissioning of robot?		
2.	Why is it necessary to disassembling a decommissioned robot?		
3.	What pre-decommissioning checks such are required?		
4.	What tools can be used for disassembling a robot?		
5.	Why is it important to detach all connections before disassembling a robot?		

6.	How to disassemble a robot?		
7.	What are reusable components?		
8.	What are repairable components?		
9.	Why is it important to properly dispose of discarded components?		
10.	What is the purpose of sorting and labeling reusable and repairable components?		

Assessors Judgment Guide

Qualification	National Vocational Certificate Level-2 Robotics Technician
Competency Standard(s)	1. Manage routine tasks at workplace 2. Maintain inventory at workplace 3. Identify security arrangements for Robotics equipment 4. Operate Robot at Workplace 5. Distinguish equipment/components for assembling purpose 6. Do component testing for robotics 7. Un Deploy robot at workplace 8. De-commission robot at workplace 9. Perform basic communication
Candidate Details	Name:_____ Registration/Roll Number: _____Signature: _____
Assessment Outcome	☐ **COMPETENT** ☐ **NOT YETCOMPETENT** **Name of the Assessor**_____**Assessor's code:**_____ **Signature:**_____

Assessment Summary (to be filled by the assessor)							
Activity	**Method**					**Result**	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment		✓					
Other Requirement							

Observation Checklist

Assessment Task	Given a robotic system, perform the following tasks:

	1. Access the security protocol employed for the robotic system. 2. Operate the robot according to standard procedure. 3. Collect & arrange the necessary tools & components and create workspace environment for robotic assembly. 4. Perform component and calibration testing in the robotic system. 5. Un deploy the robotic system. 6. Decommission the robotic system.

During the practical assessment, candidate demonstrated the following:		**Yes**	**No**	**Remarks**
1.	Identified relevant security protocols as per standard operating procedures.			
2.	Identified gaps in current security protocols			
3.	Formulated and report security solutions to supervisor			
4.	Prepared suitable work environment for the robot.			
5.	Followed instruction as given in standard operating procedure while operating the robot			
6.	Arranged components according to identified order			
7.	Arranged tools according to identified order			
8.	Followed SOPs to perform component tests			
9.	Performed calibration test according to instructions			
10.	Followed standard procedure to uninstall the robot			
11.	Detached connections effectively			
12.	Followed the standard operating procedure for disassembling of robot			
Competent ☐		**Not Yet Competent** ☐		

Feedback to the Candidate
Candidate's Signature_____Assessor's Signature_____

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate ROBOTICS TECHNICIAN Level 1 -4
Competency Standard(s)	Manage routine tasks at workplace Maintain inventory at workplace Identify security arrangements for Robotics equipment Operate Robot at Workplace Distinguish equipment/components for assembling purpose Do component testing for robotics Un Deploy robot at workplace De-commission robot at workplace Perform basic communication

Candidate Details	Name_____ Registration/Roll Number_____
Guidance for Candidate	**To meet this standard you are required to complete the following within the giventimeframe (for practical demonstration & assessment):** 1. Access the security protocol employed for the robotic system. 2. Operate the robot according to standard procedure. 3. Collect & arrange the necessary tools & components and create workspace environment for robotic assembly. 4. Perform component and calibration testing in the robotic system. 5. Un deploy the robotic system. 6. Decommission the robotic system. 7. Knowledge assessment (Oral)
Time: 30 min	During a practical assessment, under observation by an assessor, you are required to **operate, test, un-deploy, decommission a robotic system** demonstrating the

Minimum Evidence Required	following criteria: 1. Identify relevant security protocols as per standard operating procedures. 2. Identify gaps in current security protocols 3. Formulate and report security solutions to supervisor 4. Prepare suitable work environment for the robot. 5. Follow instruction as given in standard operating procedure while operating the robot 6. Arrange components according to identified order 7. Arrange tools according to identified order 8. Follow SOPs to perform component tests 9. Perform calibration test according to instructions 10. Follow standard procedure to uninstall the robot 11. Detach connections effectively 12. Follow the standard operating procedure for disassembling of robot

Knowledge Assessment

Qualification	National Vocational Certificate Level-2 Robotics Technician
Competency Standard(s)	1. Manage routine tasks at workplace 2. Maintain inventory at workplace 3. Identify security arrangements for Robotics equipment 4. Operate Robot at Workplace 5. Distinguish equipment/components for assembling purpose 6. Do component testing for robotics 7. Un Deploy robot at workplace 8. De-commission robot at workplace 9. Perform basic communication
Candidate Details	Name:_____ Registration/Roll Number: _____Candidate Signature:_____
Assessment Outcome	☐ **COMPETENT** ☐ **NOT ETCOMPETENT** Name of the Assessor:_____Assessor'scode:_____ Signature of the Assessor:_____

Candidate's response is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may be used to clarify candidate understanding of topic and its application.

Questions (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)		**Satisfactory**	**Not Satisfactory**
1.	What is the purpose of security protocols?		
2.	How we can identify gaps in current security protocols?		

3.	What are pre-operative tests for the given robot?		
4.	What are post-operative tests for the given robot?		
5.	Enlist basic mechanical/Electrical tools used for robotic assembly?		
6.	What is Component Testing?		
7.	How to perform calibration test?		
8.	How to uninstall the robot?		
9.	What is decommissioning of robot?		
10.	Why is it necessary to disassembling a decommissioned robot?		

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standards	1. Manage routine tasks at workplace 2. Maintain inventory at workplace 3. Identify security arrangements for Robotics equipment 4. Operate Robot at Workplace 5. Distinguish equipment/components for assembling purpose 6. Do component testing for robotics 7. Un Deploy robot at workplace 8. De-commission robot at workplace 9. Perform basic communication
Assessment Task	Given a robotic system, perform the following tasks: 1. Access the security protocol employed for the robotic system. 2. Operate the robot according to standard procedure. 3. Collect & arrange the necessary tools & components and create workspace environment for robotic assembly. 4. Perform component and calibration testing in the robotic system. 5. Un deploy the robotic system. 6. Decommission the robotic system.

I can…….

Performance Criteria	**Yes**	**No**
1. Identify relevant security protocols as per standard operating procedures.	☐	☐
2. Identify gaps in current security protocols	☐	☐
3. Formulate and report security solutions to supervisor	☐	☐
4. Prepare suitable work environment for the robot.	☐	☐
5. Follow instruction as given in standard operating procedure while operating the robot	☐	☐
6. Arrange components according to identified order	☐	☐
7. Arrange tools according to identified order	☐	☐
8. Follow SOPs to perform component tests	☐	☐
9. Perform calibration test according to instructions	☐	☐
10. Follow standard procedure to uninstall the robot	☐	☐
11. Detach connections effectively	☐	☐
12. Follow the standard operating procedure for disassembling of robot	☐	☐

Candidate's Signature_____ Assessor's Signature_____

Date: _____

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