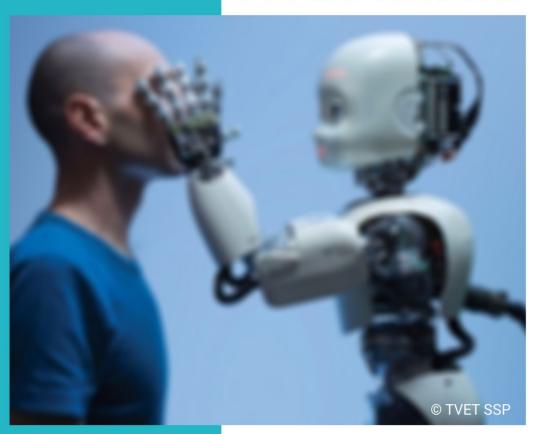








# ROBOTICS TECHNICIAN



ASSESSMENT PACKAGE

National Vocational Certificate Level 2

Version 1 - October, 2019





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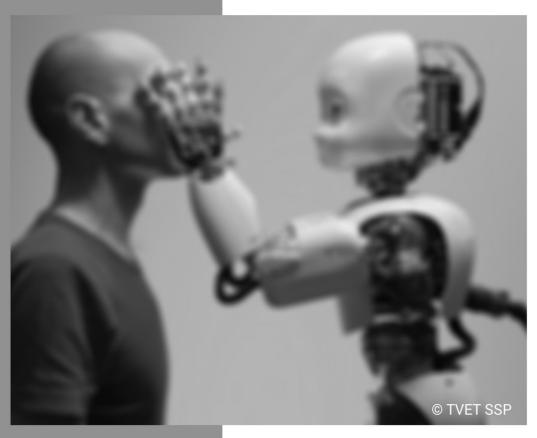
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**Document Version** October, 2019 **Islamabad, Pakistan** 

# 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	<ol> <li>Make a list to identify security protocols and perform the procedure of checking security protocols and make a comparison with old data.</li> </ol>
	<ol><li>Provide all parameters of Robot performance record for last week in in the format given in <b>Annexure-A</b>.</li></ol>
	3. Knowledge assessment (Oral)

1 (2)	^
ıcaı	1

Perfor	mance 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	To meet this standard, you are required to complete the following within the given timeframe (for practical demonstration & assessment):
<b>Details</b> Guidance for	Make a list to identify security protocols and perform the procedure of checking security protocols and make a comparison with old data.
Candidate  Assessment Outcome	<ol> <li>Provide all parameters of Robot performance record for last week in the format given in Annexure-A.</li> <li>Knowledge assessment (Oral)Assessor's code:</li> </ol>
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	<ol> <li>Keep performance records timely and relevant.</li> <li>Acknowledge both positives and negatives of the recorded activities.</li> <li>Keep the logs factual and detailed.</li> <li>Create a sense of continuity and consistency while maintaining logs.</li> <li>Identify relevant security protocols as per standard operating procedures.</li> <li>Follow instructions as per standard operating procedures.</li> <li>Check whether security logs are followed as per standard operating procedures</li> <li>Assess current security performance</li> <li>Identify gaps in current security protocols</li> <li>Formulate and report security solutions to supervisor</li> </ol>

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			<b>✓</b>					
Knowledge Assessment		✓						
Other Requirement								

#### **Observation Checklist**

Assess	sment Task	2.	procedure of chowith old data.	ecking secu ameters of mat given in	rity pr Robo n <b>Anne</b>	otocol t perf	tocols and perform the s and make a comparison ormance record for last
During follow		essment,	candidate demonstr	ated the	Yes	No	Remarks
1.	Kept performa	nce reco	ords timely and rele	evantly.			
2.	_	Acknowledged both positives and negatives of the recorded activities.					
3.	Kept the logs f	actual a	nd detailed.				
4.	Created a sens	ted a sense of continuity and consistency while					
5.	Identified rele		urity protocols as p	er standard			
6.	Followed instr procedures.	ollowed instructions as per standard operating					
7.	Checked whet standard oper		rity logs are follow ocedures	ed as per			
8.	Assessed curre	ent security performance					
9.	Identified gaps	s in curre	ent security protoco	ols			
10.	Formulated ar supervisor	nd report security solutions to					
Compe	etent			Not Yet Com	petent		

Feedback to the Candidate				
Candidate's				
Signature	Assessor's Signature			

#### **Annexure A**

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

## **Knowledge Assessment**

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

	ndidate's response is not required to be identical, but similar concepts and/or key stions (Candidate condite indeasswalled of costions of the concepts and the concepts and the condition of the	words must be use Satisfactory	d. Oral questioning may Not Satisfactory
unde	erstanding of the topics and their application)	-	
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		
		-	
l			

#### **Self-Assessment Checklist**

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

rformance Criteria	Yes	No
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 procedu while operating the robot	re	
11. Ensure proper functioning of the given robot.		
12. Recognize appropriate post operation test for the particul robot	ar	
13. Follow standard operating procedure to perform post operation test		
didate's Signature Assessor's		

#### **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
Standard(s)	

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
Minimum Evidence Required	<ol> <li>suitability of workplace for testing. You are required to demonstrate the following criteria:</li> <li>Ensure proper connectivity of all components according to instructions</li> <li>Check initial power indicators</li> <li>Perform basic calibration of robot</li> <li>Perform test run</li> <li>Identify suitable work environment for the robot.</li> <li>Identify obstacles that effects robot operations</li> <li>Prepare suitable work environment for the robot.</li> <li>Ensure safety for the robotic equipment.</li> <li>Identify the standard operating procedure for the robot.</li> <li>Follow instruction as given in standard operating procedure while operating the robot</li> <li>Ensure proper functioning of the robot.</li> <li>Recognize appropriate post operation test for the particular robot</li> <li>Follow standard operating procedure to perform post operation test</li> </ol>

# **Assessors Judgment Guide**

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

Assessment Summary (to be filled by the assessor)							
Activity Method Result							sult
Nature of Activity		Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			<b>√</b>				
Knowledge Assessment		<b>√</b>					
Other Requirement							

#### **Observation Checklist**

Asses	Perform pre and post-operative test as per standard operating procedure. Also ensure suitability of workplace for testing.					
_	During the practical assessment, candidate demonstrate following:		ated the	Yes	No	Remarks
1.	Ensure proper according to in	connectivity of all componenstructions	ents			
2.	Check initial po	ower indicators				
3.	Perform basic	calibration of robot				
4.	Perform test ru	un				
5.	Identify suitabl	le work environment for the	e robot.			
6.	Identify obstac	cles that effects robot opera	itions			
7.	Prepare suitab	le work environment for the	e robot.			
8.	Ensure safety f	for the robotic equipment.				
9.	Identify the starobot.	andard operating procedure	for the			
10.		tion as given in standard ope ile operating the robot	erating			
11.	Ensure proper	functioning of the robot.				
12.	Recognize appr particular robo	ropriate post operation test ot	t for the			
13.	Follow standar operation test	rd operating procedure to p	erform post			
Compe	etent		Not Yet Com	petent		

## **Knowledge Assessment**

Qualification	National Vocational Certificate Level-2 in Robotics Technician			
Competency	Operate Robots at Workplace			
Standard(s)				
Candidate	Name:			
Details	Registration/Roll Number: Candidate Signature:			
Assessment Outcome	COMPETENT NOT YET COMPETENT  Name of the Assessor: Assessor's code:  Signature of the Assessor:			
Candidate's respons	se is not required to be identical, but similar concepts and/or keywords must be used. Oral questioning may			

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.

	stions (Candidate confidently answered questions correctly and demonstrated erstanding 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.			

#### National Vocational Certificate Level-2 in Robotics Technician

Feedback to the Candidate		
Candidate's Signature	_ Assessor's Signature	

## **Knowledge Assessment**

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

Que	stions (Candidate confidently answered questions correctly and demonstrated	Satisfactory	Not Satisfactory
unde	rstanding of the topics and their application)		
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	0714001057 Distinguish equipment/components for assembling		
Standards	purpose		
Assessment Task	Collect & arrange the following tools & components and create		
	workspace environment for robotic assembly.		
	<ul> <li>Hammer, Screwdrivers &amp; 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</li> </ul>		

I can.....

Performance Criteria	Yes	No
List all assembly components		
<ol><li>Distinguish between different types of components based on various traits.</li></ol>		
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:	
B 4 (C	

## **Instruction Sheet for the Candidate**

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

	T					
Candidate	Name					
Details	Registration/Roll Number					
	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.					
Guidance for Candidate	<ul> <li>Hammer, Screwdrivers &amp; 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</li> </ul>					
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	<ol> <li>List all assembly components</li> <li>Distinguish between different types of components based on various traits.</li> <li>Label components</li> <li>Know about components from user manual</li> <li>Identify order of assembly</li> <li>Recognize required components</li> <li>Arrange components according to identified order</li> <li>List different types of tools</li> <li>Select appropriate tools for assembly</li> <li>Arrange tools according to identified order</li> <li>Check space availability</li> <li>Arrange racks for the equipment</li> <li>Place components based on functionality</li> <li>Ensure safety measures</li> <li>Ensure availability of consumables</li> <li>Ensure backup power source</li> </ol>					

# **Assessors Judgment Guide**

Qualification	National Vocational Certificate ROBOTICS TECHNICIAN Level1 -4				
Competency	Distinguish equipment/components f	or assembling purpose			
Standard(s)					
Candidate Details	Name:  Registration/Roll Number:	Signature:			
	Registration/Non Number.	Signature.			
Assessment	COMPETENT	NOT YETCOMPETENT			
Outcome	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			<b>✓</b>				
Knowledge Assessment		<b>✓</b>					
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 Yes Remarks following: Listed all assembly components Distinguished between different types of 2. components based on various traits. Labelled components 3. 4. Knew about components from user manual Identified order of assembly Recognized required components 6. 7. Arranged components according to identified order 8. Listed different types of tools 9. Selected appropriate tools for assembly Arranged tools according to identified order 10. Checked space availability 11. 12. Arranged racks for the equipment Placed components based on functionality 13. Ensured safety measures 14.

**Not Yet Competent** 

Ensured availability of consumables

Ensured backup power source

15.

16. En

Feedback to the Candidate			
Candidate's SignatureSignature			

## **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	COMPETENT NOT YETCOMPETENT			
Outcome	Name of the Assessor: Assessor's code:			
	Signature of the Assessor:			
0 1:1 . /				

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.

	estions (Candidate confidently answered questions correctly and demonstrated erstanding 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	0714001058 Do component testing for robotics						
Standards							
Assessment Task	<ul> <li>Create testing criteria for given project</li> <li>Identify components and testing procedures</li> <li>List and Follow SOP's</li> <li>Collect, compile and validate test reports</li> <li>Prepare report on performance and component faults parameters</li> <li>Perform calibration test according to instruction</li> <li>Report calibration status of the testing equipment</li> </ul>						

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Performance Criteria	Yes	No
Identify work bench components		
Identify testing criteria according to given standard		
Follow instructions to prepare test bench		
4. Identify components that requires testing		
5. Identify relevant testing procedures		
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**

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

Candidate	Name								
Details	Registration/Roll Number								
	To meet this standard, you are required to complete the following within the given timeframe (for practical demonstration & assessment):								
Guidance for Candidate	<ul> <li>Create testing criteria for given project</li> <li>Identify components and testing procedures</li> <li>List and Follow SOP's</li> <li>Collect, compile and validate test reports</li> <li>Prepare report on performance and component faults parameters</li> <li>Perform calibration test according to instruction</li> <li>Report calibration status of the testing equipment</li> </ul>								
	During a practical assessment, under observation by an assessor, you are required to perform the above task, demonstrating the following criteria:								
Time: 30 min	Identify work bench components								
	Identify testing criteria according to given standard								
	Follow instructions to prepare test bench								
	Identify components that requires testing								
	5. Identify relevant testing procedures								
	List SOPs according to testing criteria								
	7. Follow SOPs to perform component tests								
	Identify and log different performance parameters								
	Ensure safety parameters while component testing								
	10. Collect and compile test results								
Minimum	11. Validate test results								
Evidence	12. Identify relevant templates for report writing								
Required	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 Le	vel 1 -4 Robotics Technician
Competency Standard(s)	Do component testing for robotics	
Candidate Details	Name:Registration/Roll Number:	
Assessment Outcome	COMPETENT	NOT YETCOMPETENT

Assessment Summary (to be filled by the assessor)								
Activity		ľ	Metho	d		Result		
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent	
Practical Skill Demonstration			✓					
Knowledge Assessment		<b>✓</b>						
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

	g the practical assessment, candidate nstrated 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			
Comp	petent Not Yet Co	mpeter	nt 🔲	

Feedback to	Feedback to the Candidate							
Candidate's Signature	_Assessor's Signature							

# **Knowledge Assessment**

Qua	lification	National Vocational Certificate Level1 -4 Robotics Technician							
	npetency ndard(s)	0714001058 Do component testing for robotics							
Can Deta	didate ails	Name:							
Registration/Roll Number: Candidate Signature:									
Asse	essment	COMPETENT NOT YETCO	MPETENT						
Out	come	Name of the Assessor: As	sessor's code:	<del></del>					
		Signature of the Assessor:							
	•	is not required to be identical, but similar concepts and/or keywoodidate understanding of topic and its application.	ords must be used. C	ral questioning may					
		e confidently answered questions correctly and demonstrated topics and their application)	Satisfactory	Not Satisfactory					
1.	_	onent Testing?							
2.	How do we id	entify the testing criteria and testing procedure?							
3.	What is Valid	ation and how do we validate the test results?							
4.	What is Calibi	ration?							
5.	How to nerfor	rm calibration test?							
٥.	Trow to perjor	The cultivation test.							
6.									
7.									
	· · · · · · · · · · · · · · · · · · ·								

## **Self-Assessment Checklist**

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

Performance Criteria	Yes	No
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		
	<u> </u>	
ndidate's Signature Assessor's		
gnature		

## **Instruction Sheet for the Candidate**

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

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 <u>un-</u> <u>deploy a robotic system</u> demonstrating the following criteria:
Minimum Evidence Required	<ol> <li>Identify procedure for shutting down of robot.</li> <li>Follow steps provided in standard operating manual.</li> <li>Ensure safety standards during the procedure.</li> <li>Identify tools and equipment required for undeployment</li> <li>Arrange tools and equipment required</li> <li>Ensure suitability of workplace for undeployment</li> <li>Identify uninstallation procedure for robot from installation manual.</li> <li>Follow standard procedure to uninstall the robot</li> <li>Ensure safety of robotic components while uninstalling</li> <li>Identify packaging requirement of components</li> <li>Ensure proper packaging of components</li> <li>Arrange components for transportation and storage.</li> <li>Identify mode of transportation.</li> <li>Ensure safe loading /unloading of the robotic components</li> <li>Ensure appropriate storage environment for components</li> </ol>

# **Assessors Judgment Guide**

Qualification	National Vocational Certificate ROBOTICS TECHNICIAN Level1 -4						
Competency	Un Deploy robot at workplace						
Standard(s)							
Candidate Details	Name:	Signature:					
Assessment Outcome	COMPETENT Name of the Assessor	NOT YETCOMPETENT					
	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		<b>√</b>					
Other Requirement							

#### **Observation Checklist**

Asses	sessment Task Given a deployed robotic system:						
	<ol> <li>Candidate is required to un deploy the robotic system by</li> </ol>						
	following standard procedure and						
	2. Transport the robotic systems for proper storage.						
During follow	-	essment, candidate demonstr	ated the	Yes	No	Remarks	
1.		edure for shutting down of	robot.				
	· ·	s provided in standard opera				-	
2.	manual.	,					
3.	Ensured safety	standards during the proce	dure.			1	
4.		s and equipment required fo	or				
	undeployment			<u> </u>		-	
5.		and equipment required		<u> </u>			
6.	Ensured suitability of workplace for undeployment						
7.	dentified uninstallation procedure for robot from		ot from				
	installation manual.						
8.	Followed standard procedure to uninstall the robot						
9.	Ensured safety of robotic components while uninstalling						
10.	Identified pack	caging requirement of comp	onents				
11.	Ensured proper packaging of components						
12.	Arranged comp	ponents for transportation a	and				
12.	storage.						
13.	Identified mode of transportation.						
14.	Ensured safe lo	oading /unloading of the rob	otic				
14.	components						
15.	Ensured appro	priate storage environment	for				
15.	components						
Compe	etent		Not Yet Com	petent			

Feedback to the Candidate				
Candidate's SignatureSignature				

### **Knowledge Assessment**

Qualification	National Vocational Certificate Level1 -4 ROBOTICS TECHNICIAN					
Competency	0714001059 Un Deploy robot at workplace					
Standard(s)						
Candidate Details	Name:					
	Registration/Roll Number: Candidate Signature:					
Assessment	COMPETENT NOT YETCOMPETENT					
Outcome	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.

	stions (Candidate confidently answered questions correctly and demonstrated erstanding 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	0714001060 De-commission robot at workplace
Standards	
Assessment Task	Given a specific robotic system:
	<ul> <li>Candidate is required to perform decommissioning of the robotic system as per decommissioning manual.</li> <li>Candidate is also required to disassemble the robotic systems as per standard operating procedure and label and store components of the robotic systems.</li> <li>Candidate the achieve all of the above while following environment, health and safety guidelines.</li> </ul>

environment, health and safety guide	elines.	
I can		
Performance Criteria	Yes	No
Identify disassembling requirements		
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		
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		

Assessor's

### **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	NameRegistration/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	<ol> <li>During a practical assessment, under observation by an assessor, you are required to decommission a robotic system demonstrating the following criteria:</li> <li>Identify disassembling requirements</li> <li>Perform pre-decommissioning checks such as Environment, health and safety (EHS).</li> <li>Select appropriate tools for disassembling of robot.</li> <li>Identify order of disassembling</li> <li>Detach connections effectively</li> <li>Follow the standard operating procedure for disassembling of robot</li> <li>Identify reusable and repairable components.</li> <li>Sort reusable and repairable components.</li> <li>Label reusable and repairable components.</li> <li>Ensure that the component is not usable or repairable.</li> <li>Identify EHS procedure for dispose of discarded components</li> <li>Ensure proper disposal of discarded components</li> </ol>

# **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:					
	COMPETENT	NOT YETCOM⊡TENT					
Assessment Outcome	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**

Asse	ssment Task	Given	a specific robot	ic system:					
	1. Candidate is required to perform decommissioning of the robotic							e robotic	
system as per decommission						anual.			
		2.	Candidate is also						stems as
			per standard ope				pel and	store	
		_	components of the						
		3.	Candidate the					while	following
			environment, he			delines	<b>3.</b>		
D		•	Knowledge asse	essment (Or	ai)	ı	1		
	g the practical a nstrated the fol				Yes	No	Remar	ks	
	1								
1.			ing requirements						
2.			nmissioning check						
			and safety (EHS).				_		
3.	robot.	ropriate	tools for disasser	nbling of					
4		or of dia	aaaamhlina				-		
4.	Identified orde						-		
5.	Detached cor		•				-		
6.			d operating proce	aure for					
7	disassembling	_		n o n o n t o					
7.			nd repairable com	•			-		
8.			repairable compo				-		
9.			d repairable comp						
10.		tne com	nponent is not usa	ble or					
	repairable.	0	duna fan diamasa a	£					
11.			dure for dispose o	DΓ					
	discarded cor						-		
12.	components	er dispo	osal of discarded						
Comr				Not Yet Co	mneter	<u> </u>	<u> </u>		
Comp	Jetent			INOL LEL CO	mherei	п 🗀			

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	COMPETENT NOT YETCOMPETENT		
Outcome	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.

	stions (Candidate confidently answered questions correctly and demonstrated erstanding 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?	
	components.	

### **Assessors Judgment Guide**

Qualification	National Vocational Certificate Level-2 Robotics Technician
Competency Standard(s)	<ol> <li>Manage routine tasks at workplace</li> <li>Maintain inventory at workplace</li> <li>Identify security arrangements for Robotics equipment</li> <li>Operate Robot at Workplace</li> <li>Distinguish equipment/components for assembling purpose</li> <li>Do component testing for robotics</li> <li>Un Deploy robot at workplace</li> <li>De-commission robot at workplace</li> <li>Perform basic communication</li> </ol>
Candidate Details	Name:Signature:
Assessment Outcome	COMPETENT Not YETCOMPETENT  Name of the AssessorAssessor's code:  Signature:

Assessment Summary (to be filled by the assessor)								
Activity		Method				Result		
Nature of Activity		Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent	
Practical Skill Demonstration			<b>√</b>					
Knowledge Assessment		<b>√</b>						
Other Requirement								

#### **Observation Checklist**

Asse	ssment Task	Given a robotic system, perform the	e follow	ing tas	sks:
	<ol> <li>Access the security protocol employed for the robotic system.</li> <li>Operate the robot according to standard procedure.</li> <li>Collect &amp; arrange the necessary tools &amp; components and create workspace environment for robotic assembly.</li> <li>Perform component and calibration testing in the robotic system.</li> <li>Un deploy the robotic system.</li> <li>Decommission the robotic system.</li> </ol>				
	ng the practica onstrated the f	al assessment, candidate following:	Yes	No	Remarks
1.		evant security protocols as per erating procedures.			
2.	Identified gar	os in current security protocols			]
3.	Formulated a supervisor	and report security solutions to			
4.	Prepared sui robot.	table work environment for the			
5.		truction as given in standard ocedure while operating the robot			
6.	Arranged components according to identified				
7.	Arranged too	els according to identified order			]
8.	Followed SO	Ps to perform component tests			
9.	Performed ca instructions	alibration test according to			
10.	Followed star	ndard procedure to uninstall the			
11.	Detached co	nnections effectively			]
12.	Followed the disassemblin	standard operating procedure for g of robot			
Cami	ootont 🔲	Not Vot C	<u></u>	~~	

Feedback to the Candidate		
Candidate's Signature	Assessor's	
Signature	,1000000. 0	

### **Instruction Sheet for the Candidate**

	National Vocational Certificate ROBOTICS TECHNICIAN
Qualification	Level 1 -4
Competency	Manage routine tasks at workplace
Standard(s)	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	NameRegistration/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

	following criteria:
Minimum Evidence Required	<ol> <li>Identify relevant security protocols as per standard operating procedures.</li> <li>Identify gaps in current security protocols</li> <li>Formulate and report security solutions to supervisor</li> <li>Prepare suitable work environment for the robot.</li> <li>Follow instruction as given in standard operating procedure while operating the robot</li> <li>Arrange components according to identified order</li> <li>Arrange tools according to identified order</li> <li>Follow SOPs to perform component tests</li> <li>Perform calibration test according to instructions</li> <li>Follow standard procedure to uninstall the robot</li> <li>Detach connections effectively</li> <li>Follow the standard operating procedure for disassembling of robot</li> </ol>

### **Knowledge Assessment**

Qualification	National Vocational Certificate Level-2 Robotics Technician				
Competency Standard(s)	<ol> <li>Manage routine tasks at workplace</li> <li>Maintain inventory at workplace</li> <li>Identify security arrangements for Robotics equipment</li> <li>Operate Robot at Workplace</li> <li>Distinguish equipment/components for assembling purpose</li> <li>Do component testing for robotics</li> <li>Un Deploy robot at workplace</li> <li>De-commission robot at workplace</li> <li>Perform basic communication</li> </ol>				
Candidate Details	Name:				
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	Manage routine tasks at workplace		
Standards	Maintain inventory at workplace		
	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.		

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Performance Criteria	Yes	No
Identify relevant security protocols as per standard operating  procedures.		
procedures.		
<ol><li>Identify gaps in current security protocols</li></ol>		
3. Formulate and report security solutions to supervisor		
4. Prepare suitable work environment for the robot.		
<ol><li>Follow instruction as given in standard operating procedure while operating the robot</li></ol>		
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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