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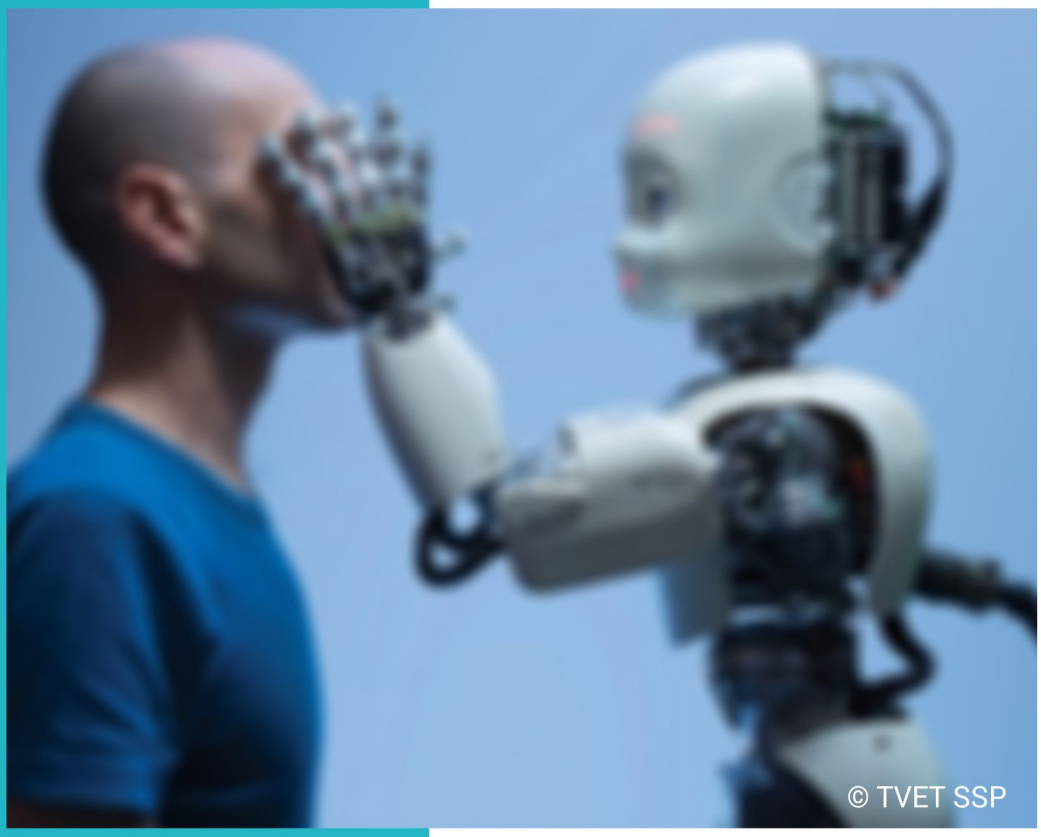
ROBOTICS TECHNICIAN



ASSESSMENT PACKAGE

National Vocational Certificate Level 3

Version 1 - October, 2019

NAVTTC

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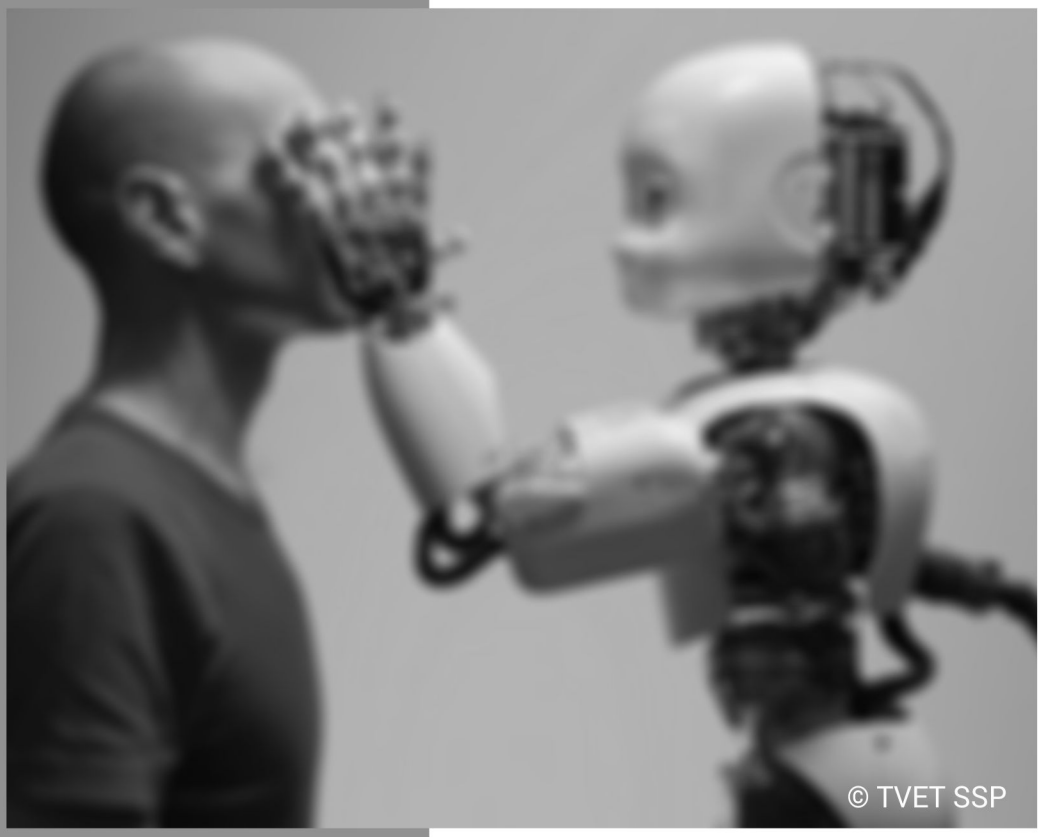
October, 2019
Islamabad, Pakistan

ROBOTICS TECHNICIAN



ASSESSMENT PACKAGE

National Vocational Certificate Level 3

Version 1 - October, 2019

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standards	0714001062 Perform Functional testing of robotics
Assessment Task	Do the following tasks for the given project: • Create testing procedures required to test functionality • Identify interfaces and tools which can be examined • Examine functioning of specific interface • Examine functioning of equipment using specific tools • Analyze and compile examination functioning results of interface and equipment

I can…….

Performance Criteria	**Yes**	**No**
1. List all functions of robotic unit	☐	☐
2. Isolate functions that require testing	☐	☐
3. Prioritize functions for testing	☐	☐
4. Organize related functions into groups	☐	☐
5. Identify and create testing procedures required to test functionality	☐	☐
6. Prepare robotic unit for testing	☐	☐
7. Identify testing procedure to be executed	☐	☐
8. Select testing equipment to be used during tests	☐	☐
9. Indicate required results to be achieved	☐	☐
10. Execute testing steps in order	☐	☐
11. Compile results of all tests	☐	☐
12. List all interfaces	☐	☐
13. Identify interfaces which can be examined	☐	☐
14. Organize interface in order of examination	☐	☐
15. Identify acceptable functionality of interface	☐	☐
16. Utilize the specific interface	☐	☐
17. Examine functioning of the specific interface	☐	☐
18. Analyze examination results	☐	☐
19. Compile examination results	☐	☐
20. List all equipment who's functionality requires examination	☐	☐

21. List functionality of equipment's to be examined		
22. Identify tools required for examination		
23. Arrange tools required for examination		
24. Identify acceptable functionality of equipment		
25. Examine equipment using specific tools		
26. Analyze examination results		
27. Compile examination results		
28. List all tests for which report is required		
29. Identify result outcomes that are required to be reported		
30. Prepare optimal template for test report		
31. Compose test report based on template		
32. Assure quality of test report		
33. Identify distribution of report		

Candidate's Signature_____ Assessor's Signature_____

Date: _____

Qualification	National Vocational Certificate Level 1 – 4 Robotics Technician

Competency Standard(s)	0714001062 Perform Functional testing of robotics

Instruction Sheet for the Candidate

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 procedures required to test functionality • Identify interfaces and tools which can be examined • Examine functioning of specific interface • Examine functioning of equipment using specific tools • Analyze and compile examination functioning results of interface and equipment • Compose test report and assure quality of test report
Time: 2.5 hrs.	During a practical assessment, under observation by an assessor, you are required to perform the above task **,** demonstrating the following criteria: 1. List all functions of robotic unit 2. Isolate functions that require testing 3. Prioritize functions for testing 4. Organize related functions into groups 5. Identify and create testing procedures required to test functionality 6. Prepare robotic unit for testing 7. Identify testing procedure to be executed 8. Select testing equipment to be used during tests 9. Indicate required results to be achieved 10. Execute testing steps in order 11. Compile results of all tests 12. List all interfaces

Minimum Evidence Required	13. Identify interfaces which can be examined 14. Organize interface in order of examination 15. Identify acceptable functionality of interface 16. Utilize the specific interface 17. Examine functioning of the specific interface 18. Analyze examination results 19. Compile examination results 20. List all equipment who's functionality requires examination 21. List functionality of equipment's to be examined 22. Identify tools required for examination 23. Arrange tools required for examination 24. Identify acceptable functionality of equipment 25. Examine equipment using specific tools 26. Analyze examination results 27. Compile examination results 28. List all tests for which report is required 29. Identify result outcomes that are required to be reported 30. Prepare optimal template for test report 31. Compose test report based on template 32. Assure quality of test report 33. Identify distribution of report

Assessors Judgment Guide

Qualification	National Vocational Certificate Level1 -4 Robotics Technician
Competency Standard(s)	Perform Functional testing of 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 procedures required to test functionality • Identify interfaces and tools which can be examined • Examine functioning of specific interface • Examine functioning of equipment using specific tools • Analyze and compile examination functioning results of interface and equipment • Compose test report and assure quality of test report

	During the practical assessment, candidate demonstrated the following:	**Yes**	**No**	**Remarks**
1.	List all functions of robotic unit			
2.	Isolate functions that require testing			
3.	Prioritize functions for testing			
4.	Organize related functions into groups			
5.	Identify and create testing procedures required to test functionality			
6.	Prepare robotic unit for testing			
7.	Identify testing procedure to be executed			
8.	Select testing equipment to be used during tests			
9.	Indicate required results to be achieved			
10.	Execute testing steps in order			
11.	Compile results of all tests			
12.	List all interfaces			
13.	Identify interfaces which can be examined			
14.	Organize interface in order of examination			
15.	Identify acceptable functionality of interface			
16.	Utilize the specific interface			
17.	Examine functioning of the specific interface			
18.	Analyze examination results			
19.	Compile examination results			
20.	List all equipment who's functionality requires examination			
21.	List functionality of equipment's to be examined			
22.	Identify tools required for examination			
23.	Arrange tools required for examination			
24.	Identify acceptable functionality of equipment			
25.	Examine equipment using specific tools			
26.	Analyze examination results			
27.	Compile examination results			
28.	List all tests for which report is required			
29.	Identify result outcomes that are required to be reported			
30.	Prepare optimal template for test report			
31.	Compose test report based on template			
32.	Assure quality of test report			
33.	Identify distribution of report			

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)	0714001062 Perform Functional Testing of 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 functionality testing?*		
2.	*What is testing procedure?*		
3.	*What are the possible steps for functionality testing?*		
4.	*Describe the examining process of interface and equipment functioning*		
5.	*Why we prepare optimal template for test reports?*		
6.	*How do we assure the quality of test reports?*		

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standards	0714001063 Commission robot at workplace
Assessment Task	• Given a robotic system that requires commissioning, o The candidate is required to prepare the environment for commissioning of robot. o The candidate should unbox robotic system and comprehend commissioning and operational instructions. o The candidate should also perform basic assembly required for commissioning of robot and perform initial testing of commissioned robot.

I can……

Performance Criteria	**Yes**	**No**
1. Specify environmental conditions for commissioning of robot.		
2. Prepare suitable environment for commissioning of robot.		
3. Arrange tools and equipment required for the commissioning of robot.		
4. Identify instructions manual for unboxing of robotic system.		
5. Arrange tools and equipment required for unboxing robotic system		
6. Follow instructions provided in manual for unboxing of robotic system		
7. Identify commissioning and operational manuals.		
8. Follow commissioning and operational instructions from manual		
9. Assist supervisor in commissioning steps provided in manual.		
10. Identify required basic assembly		
11. Prioritize basic assembly based on requirements		
12. Follow instruction manual to perform basic assembly		
13. Perform initial tests of commissioned robot.		
14. Follow steps for initial testing of robot.		
15. Prepare initial testing report		

Candidate's Signature_____ Assessor's Signature_____

Date: _____

Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standard(s)	0714001063 Commission robot at workplace

Instruction Sheet for the Candidate

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. Given a robotic system that requires commissioning, o The candidate is required to prepare the environment for commissioning of robot. o The candidate should unbox robotic system and comprehend commissioning and operational instructions. o The candidate should also perform basic assembly required for commissioning of robot and perform initial testing of commissioned robot. 2. Knowledge assessment (Oral)
Time: 3 hrs.	During a practical assessment, under observation by an assessor, you are required to **Commission a robotic system** demonstrating the following criteria:
Minimum Evidence Required	**1.** Specify environmental conditions for commissioning of robot. **2.** Prepare suitable environment for commissioning of robot. **3.** Arrange tools and equipment required for the commissioning of robot. **4.** Identify instructions manual for unboxing of robotic system. **5.** Arrange tools and equipment required for unboxing robotic system **6.** Follow instructions provided in manual for unboxing of robotic system **7.** Identify commissioning and operational manuals. **8.** Follow commissioning and operational instructions from manual **9.** Assist supervisor in commissioning steps provided in manual. **10.** Identify required basic assembly **11.** Prioritize basic assembly based on requirements **12.** Follow instruction manual to perform basic assembly **13.** Perform initial tests of commissioned robot. **14.** Follow steps for initial testing of robot. **15.** Prepare initial testing report

Assessors Judgment Guide

Qualification	National Vocational Certificate Level1 -4 Robotics Technician

Competency Standard(s)	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	1. Given a robotic system that requires commissioning, o The candidate is required to prepare the environment for commissioning of robot. o The candidate should unbox robotic system and comprehend commissioning and operational instructions. o The candidate should also perform basic assembly required for commissioning of robot and perform initial testing of commissioned robot.

	During the practical assessment, candidate demonstrated the following:	**Yes**	**No**	**Remarks**
1.	Specified environmental conditions for commissioning of robot.			
2.	Prepared suitable environment for commissioning of robot.			
3.	Arranged tools and equipment required for the commissioning of robot.			
4.	Identified instructions manual for unboxing of robotic system.			
5.	Arranged tools and equipment required for unboxing robotic system			
6.	Followed instructions provided in manual for unboxing of robotic system			
7.	Identified commissioning and operational manuals.			
8.	Followed commissioning and operational instructions from manual			
9.	Assisted supervisor in commissioning steps provided in manual.			
10.	Identified required basic assembly			
11.	Prioritized basic assembly based on requirements			
12.	Followed instruction manual to perform basic assembly			
13.	Performed initial tests of commissioned robot.			
14.	Followed steps for initial testing of robot.			
15.	Prepared initial testing report			

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)	0714001063 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.	Describe environmental conditions which are suitable for commissioning of robot.		
2.	What tools and equipment are required for the commissioning of robot?		
3.	What tools and equipment are required for unboxing robotic system?		
4.	How can you assist supervisor in commissioning of robot?		
5.	What basic assembly is required for commissioning of robot?		

6.	In what order should the basic assembly be performed?		
7.	How do you confirm if the robot has been commissioned properly?		
8.	What should we do with the results obtained from initial testing of robot?		
9.			
10.			

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate Level1 -4 Robotics Technician
Competency Standards	**0714001064 Deploy robot at workplace**
Assessment Task	Given a robotic system, deploy the robotic system as per requirements by following instructions given in the deployment manual.

I can…….

Performance Criteria	**Yes**	**No**
1. Specify environmental parameters for deployment of robot.	☐	☐
2. Identify suitable environment for deployment of robot.	☐	☐
3. Prepare suitable environment for deployment of robot.	☐	☐
4. Identify transportation means for the robotic system.	☐	☐
5. Arrange transportation of the robot to the deployment site.	☐	☐
6. Ensure safe transportation of the robotic system.	☐	☐
7. Identify installation manuals.	☐	☐
8. Arrange tools and equipment required for the deployment of robot.	☐	☐
9. Follow instructions provided in manuals to install the robot at site.	☐	☐
10. Comprehend initial tests of deployed robot.	☐	☐
11. Follow steps for initial testing of deployed robot.	☐	☐
12. Prepare initial testing report.	☐	☐

Candidate's Signature_____Assessor's Signature_____

Date: _____

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate Level 1 -4 Robotics Technician
Competency Standard(s)	**0714001064 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):** 1. Given a robotic system, deploy the robotic system as per requirements by following instructions given in the deployment manual. 2. Knowledge assessment (Oral)
Time: 3 hrs.	During a practical assessment, under observation by an assessor, you are required to **deploy a robotic system** demonstrating the following criteria:
Minimum Evidence Required	1. Specify environmental parameters for deployment of robot. 2. Identify suitable environment for deployment of robot. 3. Prepare suitable environment for deployment of robot. 4. Identify transportation means for the robotic system. 5. Arrange transportation of the robot to the deployment site. 6. Ensure safe transportation of the robotic system. 7. Identify installation manuals. 8. Arrange tools and equipment required for the deployment of robot. 9. Follow instructions provided in manuals to install the robot at site. 10. Comprehend initial tests of deployed robot. 11. Follow steps for initial testing of deployed robot. 12. Prepare initial testing report.

Assessors Judgment Guide

Qualification	National Vocational Certificate Level1 -4 Robotics Technician
Competency Standard(s)	**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 robotic system, deploy the robotic system as per requirements by following instructions given in the deployment manual.

During the practical assessment, candidate demonstrated the following:		**Yes**	**No**	**Remarks**
1.	Specified environmental parameters for deployment of robot.			
2.	Identified suitable environment for deployment of robot.			
3.	Prepared suitable environment for deployment of robot.			
4.	Identified transportation means for the robotic system.			
5.	Arranged transportation of the robot to the deployment site.			
6.	Ensured safe transportation of the robotic system.			
7.	Identified installation manuals.			
8.	Arranged tools and equipment required for the deployment of robot.			
9.	Followed instructions provided in manuals to install the robot at site.			
10.	Comprehended initial tests of deployed robot.			
11.	Followed steps for initial testing of deployed robot.			
12.	Prepared initial testing report.			

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)	**0714001064 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.	Describe some environmental parameters for deployment of robot?		
2.	How do you determine if environment is suitable for deployment of robot?		
3.	How to prepare an environment for deployment of robot?		
4.	How to transport the robotic system to deployment site?		
5.	How to ensure safety while transportation of the robotic system?		

6.	What is the purpose of installation manuals?		
7.	What tools and equipment are required for the deployment of robot?		
8.	How do you determine if the deployment was successful?		
9.	What do you do with initial test results?		
10.			

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate Level-3 in Robotics Technician
Competency Standards	0714001065 Monitor Operations of robot at workplace
Assessment Task	Monitor robotic operation assigned by the assessor. Enlist all possible outcome of that particular operation as per Annexure A. Identify and report if there is any shortcoming by comparing it with established threshold.

I can…….

Performance Criteria	**Yes**	**No**
1. List all robot operation as per given robot.	☐	☐
2. Select robot operation for which outcomes have to be identified	☐	☐
3. List all possible outcomes of specified robot operation	☐	☐
4. Recognize important parameters to assess outcomes of robot operation.	☐	☐
5. Identify desired outcomes	☐	☐
6. List established thresh holds for outcome	☐	☐
7. Assess outcomes of the robotic operation	☐	☐
8. Compare outcome against established thresh holds	☐	☐
9. Examine errors in outcomes	☐	☐
10. Apply corrective measure to eliminate errors	☐	☐
11. Prepare operation report	☐	☐
12. Identify log parameter	☐	☐
13. Prepare routine log	☐	☐
14. Create sense of continuity and consistency while maintaining logs	☐	☐
15. Keep the log factual and detailed	☐	☐

Candidate's Signature_____ Assessor's Signature_____

Date: _____

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate Level-3 in Robotics Technician
Competency Standard(s)	0714001065 Monitor Operations of 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 given time frame (for practical demonstration & assessment):** 1. Monitor robotic operation assigned by the assessor. Enlist all possible outcome of that particular operation as per Annexure A. Identify and report if there is any shortcoming by comparing it with established threshold.
Time: 3 hrs.	During a practical assessment, under observation by an assessor, you are required to monitor robotic operation assigned by the assessor. Enlist all possible outcome of that particular operation as per annexure A. Identify and report if there is any shortcoming by comparing it with established threshold. You are required demonstrate the following criteria: 1. List all robot operation 2. Select robot operation for which outcomes have to be identified 3. List all possible outcomes of specified robot operation 4. Recognize important parameters to assess outcomes of robot operation. 5. Identify desired outcomes 6. List established thresh holds for outcome 7. Assess outcomes of the robotic operation 8. Compare outcome against established thresh holds 9. Examine errors in outcomes 10. Apply corrective measure to eliminate errors 11. Prepare operation report 12. Identify log parameter 13. Prepare routine log 14. Create sense of continuity and consistency while maintaining logs 15. Keep the log factual and detailed
Minimum Evidence Required	

Assessors Judgment Guide

Qualification	National Vocational Certificate Level-3 in Robotics Technician
Competency Standard(s)	Monitor Operations of robot 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	Monitor robotic operation assigned by the assessor. Enlist all possible outcome of that particular operation as per Annexure A. Identify and report if there is any shortcoming by comparing it with established threshold.

	During the practical assessment, candidate demonstrated the following:	**Yes**	**No**	**Remarks**
1.	List all robot operation			
2.	Select robot operation for which outcomes have to be identified			
3.	List all possible outcomes of specified robot operation			
4.	Recognize important parameters to assess outcomes of robot operation.			
5.	Identify desired outcomes			
6.	List established thresh holds for outcome			
7.	Assess outcomes of the robotic operation			
8.	Compare outcome against established thresh holds			
9.	Examine errors in outcomes			
10.	Apply corrective measure to eliminate errors			
11.	Prepare operation report			
12.	Identify log parameter			
13.	Prepare routine log			
14.	Create sense of continuity and consistency while maintaining logs			
15.	Keep the log factual and detailed			

Competent ☐	**Not Yet Competent** ☐

Feedback to the Candidate

Candidate's Signature_____ **Assessor's Signature** _____

Annexure A:

Sr. No.	Operation Name	Threshold	Outcome assess	Shortcoming	Remarks

Knowledge Assessment

Qualification	National Vocational Certificate Level-3 in Robotics Technician
Competency Standard(s)	0714001065 Monitor Operations of robot 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.	*Discuss Robotics operation and outcome of robotics procedure?*		
2.	*Explain threshold in robotic procedures.*		
3.	*How shortcomings in robotics operation are identified?*		
4.	*Why it is important to maintain historical log?*		
5.			
6.			
7.			
8.			

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate Level1 -4 Robotics Technician
Competency Standards	**0714001061 Perform assembling of equipment / components**
Assessment Task	1. Assemble a complete Robot step by step and make a list of all procedure step by step which you will perform. Also make a list of safety measures which you will use during assembling. Also compare your list of procedure with actual assembly manual. 2. Knowledge assessment (Oral)

I can……..

Performance Criteria	**Yes**	**No**
1. Acquire list of assembly manuals		
2. Select relevant assembly/ installation manuals		
3. Read instruction manual thoroughly		
4. Mark relevant steps for assembly		
5. List the operation procedure for assembly		
6. Organize the assembly plan		
7. Make list of required items		
8. Ensure safety standards		
9. Prepare a working environment for assembly		
10. List all steps as per SOP.		
11. Follow the assembly steps.		
12. List all assemblies performed		
13. Select assemblies that require verification		
14. Match the assembly with the drawing		
15. Inspect joint/links coupling of the robot		
16. Verify the wire connections		
17. Compare assembly with the manual		
18. Generate verification report		

Candidate's Signature_____ Assessor's Signature_____

Date: _____

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate ROBOTICS TECHNICIAN Level 1 -4
Competency Standard(s)	**0714001061 Perform assembling of equipment / components**

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):** 3. Assemble a complete Robot step by step and make a list of all procedure step by step which you will perform. Also make a list of safety measures which you will use during assembling. Also compare your list of procedure with actual assembly manual. 4. Knowledge assessment (Oral)
Time: 120 min	During a practical assessment, under observation by an assessor, you are required to assemble a complete Robot by demonstrating the following criteria:
Minimum Evidence Required	1. Acquire list of assembly manuals 2. Select relevant assembly/ installation manuals 3. Read instruction manual thoroughly 4. Mark relevant steps for assembly 5. List the operation procedure for assembly 6. Organize the assembly plan 7. Make list of required items 8. Ensure safety standards 9. Prepare a working environment for assembly 10. List all steps as per SOP. 11. Follow the assembly steps. 12. List all assemblies performed 13. Select assemblies that require verification 14. Match the assembly with the drawing 15. Inspect joint/links coupling of the robot 16. Verify the wire connections 17. Compare assembly with the manual 18. Generate verification report

Assessors Judgment Guide

Qualification	National Vocational Certificate ROBOTICS TECHNICIAN Level1 -4
Competency Standard(s)	**Perform assembling of equipment / components**
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. Assemble a complete Robot step by step and make a list of all procedure step by step which you will perform. Also make a list of safety measures which you will use during assembling. Also compare your list of procedure with actual assembly manual. 2. Knowledge assessment (Oral)

	During the practical assessment, candidate demonstrated the following:	**Yes**	**No**	**Remarks**
1.	Acquire list of assembly manuals			
2.	Select relevant assembly/ installation manuals			
3.	Read instruction manual thoroughly			
4.	Mark relevant steps for assembly			
5.	List the operation procedure for assembly			
6.	Organize the assembly plan			
7.	Make list of required items			
8.	Ensure safety standards			
9.	Prepare a working environment for assembly			
10.	List all steps as per SOP.			
11.	Follow the assembly steps.			
12.	List all assemblies performed			
13.	Select assemblies that require verification			
14.	Match the assembly with the drawing			
15.	Inspect joint/links coupling of the robot			
16.	Verify the wire connections			
17.	Compare assembly with the manual			
18.	Generate verification report			

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)	**0714001066 Perform assembling of equipment / components**
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.	*Why we need to read manuals before assembling a Machine?* *Candidate's response*		
2.	*What is the basic operational procedure of assembly?* *Candidate's response*		
3.	*What are the tools that required for assembly and why we need those specific tools?* *Candidate's response*		
4.	*What should be the working environment for assembling a Robot?* *Candidate's response*		
5.	*What safety measures required for assembling a Robot?*		
6.	*Do we need verification process after assembly? If yes then why we need verification process? What are the verifications processes?*		

7.	*What is the SOP that we need to follow during assembly?*		
8.			
9.			
10.			

Assessors Judgment Guide

Qualification	National Vocational Certificate Level-3 Robotics Technician
Competency Standard(s)	1. Commission robot at workplace 2. Deploy robot at workplace 3. Perform assembling of equipment / components 4. Perform Functional testing of robotics 5. Monitor Operations of 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	1. Commission a Robotic system, assemble all of its parts and deploy it at given workspace by follow all operational instructions and safety measures. Also perform all of its functional testing and monitor all operations of deployed robot. 2. Knowledge assessment (Oral)

	During the practical assessment, candidate demonstrated the following:	**Yes**	**No**	**Remarks**
1.	Isolate functions that require testing			
2.	Prioritize functions for testing			
3.	Identify and create testing procedures required to test functionality			
4.	Prepare robotic unit for testing			
5.	Identify testing procedure to be executed			
6.	Select testing equipment to be used during tests			
7.	Indicate required results to be achieved			
8.	Execute testing steps in order			
9.	Identify interfaces which can be examined			
10.	Identify acceptable functionality of interface			
11.	Utilize the specific interface			
12.	Examine functioning of the specific interface			
13.	Analyze examination results			
14.	Identify tools required for examination			
15.	Identify acceptable functionality of equipment			
16.	Examine equipment using specific tools			
17.	Analyze examination results			
18.	Identify result outcomes that are required to be reported			
19.	Prepare suitable environment for commissioning of robot.			
20.	Arrange tools and equipment required for the commissioning of robot.			
21.	Identify instructions manual for unboxing of robotic system.			
22.	Arrange tools and equipment required for unboxing robotic system			
23.	Follow instructions provided in manual for unboxing of robotic system			
24.	Follow commissioning and operational instructions from manual			
25.	Assist supervisor in commissioning steps provided in manual.			
26.	Prioritize basic assembly based on requirements			
27.	Follow instruction manual to perform basic assembly			
28.	Perform initial tests of commissioned robot.			
29.	Specify environmental parameters for deployment of robot.			
30.	Prepare suitable environment for deployment of robot.			
31.	Arrange transportation of the robot to the deployment site.			

32.	Ensure safe transportation of the robotic system.			
33.	Identify installation manuals.			
34.	Arrange tools and equipment required for the deployment of robot.			
35.	Follow instructions provided in manuals to install the robot at site.			
36.	Comprehend initial tests of deployed robot.			
37.	Follow steps for initial testing of deployed robot.			
38.	Prepare initial testing report.			
39.	Select robot operation for which outcomes have to be identified			
40.	Recognize important parameters to assess outcomes of robot operation.			
41.	Identify desired outcomes			
42.	Assess outcomes of the robotic operation			
43.	Compare outcome against established thresh holds			
44.	Examine errors in outcomes			
45.	Apply corrective measure to eliminate errors			
46.	Prepare operation report			
47.	Identify log parameter			
48.	Prepare routine log			
49.	Create sense of continuity and consistency while maintaining logs			
50.	Keep the log factual and detailed			
51.	Acquire list of assembly manuals			
52.	Select relevant assembly/ installation manuals			
53.	Read instruction manual thoroughly			
54.	Mark relevant steps for assembly			
55.	Organize the assembly plan			
56.	Ensure safety standards			
57.	Prepare a working environment for assembly			
58.	Follow the assembly steps.			
59.	Select assemblies that require verification			
60.	Match the assembly with the drawing			
61.	Inspect joint/links coupling of the robot			
62.	Verify the wire connections			
63.	Compare assembly with the manual			
Competent ☐		**Not Yet Competent** ☐		

Feedback to the Candidate

Candidate's Signature_____Assessor'sSignature_____

Instruction Sheet for the Candidate

Qualification	National Vocational Certificate Level-3 Robotics Technician
Competency Standard(s)	1. Commission robot at workplace 2. Deploy robot at workplace 3. Perform assembling of equipment / components 4. Perform Functional testing of robotics 5. Monitor Operations of 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):** 1. Commission a Robotic system, assemble all of its parts and deploy it at given workspace by follow all operational instructions and safety measures. Also perform all of its functional testing and monitor all operations of deployed robot. 2. Knowledge assessment (Oral)
Time: 4 Hrs.	During a practical assessment, under observation by an assessor, you are required to commission a robot by demonstrating the following criteria:
Minimum Evidence Required	1. Isolate functions that require testing 2. Prioritize functions for testing 3. Identify and create testing procedures required to test functionality 4. Prepare robotic unit for testing 5. Identify testing procedure to be executed 6. Select testing equipment to be used during tests 7. Indicate required results to be achieved 8. Execute testing steps in order 9. Identify interfaces which can be examined 10. Identify acceptable functionality of interface 11. Utilize the specific interface 12. Examine functioning of the specific interface 13. Analyze examination results 14. Identify tools required for examination 15. Identify acceptable functionality of equipment 16. Examine equipment using specific tools 17. Analyze examination results 18. Identify result outcomes that are required to be reported 19. Prepare suitable environment for commissioning of robot. 20. Arrange tools and equipment required for the commissioning of robot. 21. Identify instructions manual for unboxing of robotic system. 22. Arrange tools and equipment required for unboxing robotic system 23. Follow instructions provided in manual for unboxing of robotic system 24. Follow commissioning and operational instructions from manual

	25. Assist supervisor in commissioning steps provided in manual. 26. Prioritize basic assembly based on requirements 27. Follow instruction manual to perform basic assembly 28. Perform initial tests of commissioned robot. 29. Specify environmental parameters for deployment of robot. 30. Prepare suitable environment for deployment of robot. 31. Arrange transportation of the robot to the deployment site. 32. Ensure safe transportation of the robotic system. 33. Identify installation manuals. 34. Arrange tools and equipment required for the deployment of robot. 35. Follow instructions provided in manuals to install the robot at site. 36. Comprehend initial tests of deployed robot. 37. Follow steps for initial testing of deployed robot. 38. Prepare initial testing report. 39. Select robot operation for which outcomes have to be identified 40. Recognize important parameters to assess outcomes of robot operation. 41. Identify desired outcomes 42. Assess outcomes of the robotic operation 43. Compare outcome against established thresh holds 44. Examine errors in outcomes 45. Apply corrective measure to eliminate errors 46. Prepare operation report 47. Identify log parameter 48. Prepare routine log 49. Create sense of continuity and consistency while maintaining logs 50. Keep the log factual and detailed 51. Acquire list of assembly manuals 52. Select relevant assembly/ installation manuals 53. Read instruction manual thoroughly 54. Mark relevant steps for assembly 55. Organize the assembly plan 56. Ensure safety standards 57. Prepare a working environment for assembly 58. Follow the assembly steps. 59. Select assemblies that require verification 60. Match the assembly with the drawing 61. Inspect joint/links coupling of the robot 62. Verify the wire connections 63. Compare assembly with the manual

Self-Assessment Checklist

Candidate Name	
Registration No.	
Qualification	National Vocational Certificate Level-3 Robotics Technician
Competency Standards	1. Commission robot at workplace 2. Deploy robot at workplace 3. Perform assembling of equipment / components 4. Perform Functional testing of robotics 5. Monitor Operations of robot at workplace
Assessment Task	1. Commission a Robotic system, assemble all of its parts and deploy it at given workspace by follow all operational instructions and safety measures. Also perform all of its functional testing and monitor all operations of deployed robot. 2. Knowledge assessment (Oral)

I can…….

Performance Criteria	**Yes**	**No**
1. Isolate functions that require testing		
2. Prioritize functions for testing		
3. Identify and create testing procedures required to test functionality		
4. Prepare robotic unit for testing		
5. Identify testing procedure to be executed		
6. Select testing equipment to be used during tests		
7. Indicate required results to be achieved		
8. Execute testing steps in order		
9. Identify interfaces which can be examined		
10. Identify acceptable functionality of interface		
11. Utilize the specific interface		
12. Examine functioning of the specific interface		
13. Analyze examination results		
14. Identify tools required for examination		
15. Identify acceptable functionality of equipment		
16. Examine equipment using specific tools		
17. Analyze examination results		
18. Identify result outcomes that are required to be reported		
19. Prepare suitable environment for commissioning of robot.		
20. Arrange tools and equipment required for the commissioning of robot.		
21. Identify instructions manual for unboxing of robotic system.		
22. Arrange tools and equipment required for unboxing robotic system		
23. Follow instructions provided in manual for unboxing of robotic system		
24. Follow commissioning and operational instructions from manual		
25. Assist supervisor in commissioning steps provided in manual.		
26. Prioritize basic assembly based on requirements		
27. Follow instruction manual to perform basic assembly		

28. Perform initial tests of commissioned robot.		
29. Specify environmental parameters for deployment of robot.		
30. Prepare suitable environment for deployment of robot.		
31. Arrange transportation of the robot to the deployment site.		
32. Ensure safe transportation of the robotic system.		
33. Identify installation manuals.		
34. Arrange tools and equipment required for the deployment of robot.		
35. Follow instructions provided in manuals to install the robot at site.		
36. Comprehend initial tests of deployed robot.		
37. Follow steps for initial testing of deployed robot.		
38. Prepare initial testing report.		
39. Select robot operation for which outcomes have to be identified		
40. Recognize important parameters to assess outcomes of robot operation.		
41. Identify desired outcomes		
42. Assess outcomes of the robotic operation		
43. Compare outcome against established thresh holds		
44. Examine errors in outcomes		
45. Apply corrective measure to eliminate errors		
46. Prepare operation report		
47. Identify log parameter		
48. Prepare routine log		
49. Create sense of continuity and consistency while maintaining logs		
50. Keep the log factual and detailed		
51. Acquire list of assembly manuals		
52. Select relevant assembly/ installation manuals		
53. Read instruction manual thoroughly		
54. Mark relevant steps for assembly		
55. Organize the assembly plan		
56. Ensure safety standards		
57. Prepare a working environment for assembly		
58. Follow the assembly steps.		
59. Select assemblies that require verification		
60. Match the assembly with the drawing		
61. Inspect joint/links coupling of the robot		
62. Verify the wire connections		
63. Compare assembly with the manual		

Candidate's Signature_____Assessor's Signature_____

Date: _____

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