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Islamabad



ELECTRICAL MACHINE WINDING TECHNICIAN



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ASSESSMENT PACKAGE
National Vocational Certificate Level 4

Version 1 - September, 2018



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Document Version

September, 2018
Islamabad, Pakistan

ELECTRICAL MACHINE WINDING TECHNICIAN



ASSESSMENT PACKAGE
National Vocational Certificate Level 4

Version 1 - September, 2018

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 4	Version:
Module Title: Contribute to Work Related Health and Safety (WHS)	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:.....
Guidance for Candidate	<p>To meet the required standard of assessment, you have to complete the following assessment tasks within the given time frame (for practical demonstration & assessment):</p> <p>Assessment Task 1. Contribute to initiate work-related health and safety measures</p> <p>Assessment Task 2. Contribute to establish work-related health and safety measures</p> <p>Assessment Task 3. Contribute to ensure legal requirements of WHS measures</p> <p>Assessment Task 4. Contribute to review WHS measures</p> <p>Assessment Task 5. Evaluate the organization's WHS system</p> <p>And complete:</p> <ol style="list-style-type: none"> 1. Knowledge assessment test (Written or Oral) 2. Portfolios at the time of assessment (if any)
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1</p> <p>Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5: Performance Criteria 6:</p>
	<p>Assessment Task 2</p> <p>Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p>
	<p>Assessment Task 3</p> <p>Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p>

	<p>Portfolios required at the time of assessment (if any) like trainees assignment, Project job etc:</p> <p>Performance criteria 1 for the evaluation of portfolio Performance criteria 2 for the evaluation of portfolio Performance criteria 3 for the evaluation of portfolio</p>
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Continued on following page

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

(Formative Assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

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

Each Assessment Task (with performance criteria)			
Assessment Task 1 : Contribute to initiate work-related health and safety measures		Description of assessment task 1	
During the practical assessment, candidate demonstrated the following:			
Yes	No	Remarks	
1	Performance criteria1:		
2	Performance criteria2:		
3	Performance criteria3:		
4	Performance criteria4:		
5	Performance criteria5		
6	Performance criteria6:		
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>	

Each Assessment Task (with performance criteria)				
Assessment Task 2 : Contribute to establish work-related health and safety measures		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 3 : Contribute to ensure legal requirements of WHS measures		Description of assessment task 3		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 4 Contribute to review WHS measures		Description of assessment task 4:		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria 2:			
3	Performance criteria 3:			
4	Performance criteria 4:			
5	Performance criteria 5:			
6	Performance criteria 6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 5 : Evaluate the organization's WHS system		Description of assessment task 5:		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria 2:			
3	Performance criteria 3:			
4	Performance criteria 4:			
5	Performance criteria 5:			
6	Performance criteria 6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio(if any)		Description of portfolio			
Current <input type="checkbox"/>		Sufficient <input type="checkbox"/>	Authentic <input type="checkbox"/>	Valid <input type="checkbox"/>	Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks	
1	Performance criteria 1				
2	Performance criteria 2				
3	Performance criteria 3				
4				
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>			

Assessors Judgment Guide

TITLE OF QUALIFICATION

(Formative Assessment)

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 4	Version:
Module Title: Contribute to Work Related Health and Safety (WHS)	Assessment Date (DD/MM/YY):		

Guidance for Candidate	To complete your assessment for this Curriculum Module, you need to answer the questions on the following pages successfully.
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Assessors Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level:4	Version:
Module Title: Contribute to Work Related Health and Safety (WHS)	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
1.	
2.	
3.	
4.	
5.	
6.	
7.	

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 4	Version:
Module Title: Analyse Workplace policy and procedure	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:												
Guidance for Candidate	<p>To meet the required standard of assessment, you have to complete the following assessment tasks within the given time frame (for practical demonstration & assessment):</p> <table border="0" data-bbox="424 813 1353 994"> <tr> <td>Assessment Task 1.</td> <td>Manage work timeframes</td> </tr> <tr> <td>Assessment Task 2.</td> <td>Manage to convene meeting</td> </tr> <tr> <td>Assessment Task 3.</td> <td>Decision making at workplace</td> </tr> <tr> <td>Assessment Task 4.</td> <td>Set and meet own work priorities at instent</td> </tr> <tr> <td>Assessment Task 5.</td> <td>Develop and maintain professional competence</td> </tr> <tr> <td>Assessment Task 6.</td> <td>Follow and implement work safety requirements</td> </tr> </table> <p>And complete:</p> <ol style="list-style-type: none"> 3. Knowledge assessment test (Written or Oral) 4. Portfolios at the time of assessment (if any) 	Assessment Task 1.	Manage work timeframes	Assessment Task 2.	Manage to convene meeting	Assessment Task 3.	Decision making at workplace	Assessment Task 4.	Set and meet own work priorities at instent	Assessment Task 5.	Develop and maintain professional competence	Assessment Task 6.	Follow and implement work safety requirements
Assessment Task 1.	Manage work timeframes												
Assessment Task 2.	Manage to convene meeting												
Assessment Task 3.	Decision making at workplace												
Assessment Task 4.	Set and meet own work priorities at instent												
Assessment Task 5.	Develop and maintain professional competence												
Assessment Task 6.	Follow and implement work safety requirements												
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1 Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5: Performance Criteria 6:</p> <p>Assessment Task 2 Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p> <p>Assessment Task 3 Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p>												

	<p>Portfolios required at the time of assessment (if any) like trainees assignment, Projects/ Jobs etc:</p> <p>Performance criteria 1 for the evaluation of portfolio Performance criteria 2 for the evaluation of portfolio Performance criteria 3 for the evaluation of portfolio</p>
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Continued on following page

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

(Formative Assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

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

Each Assessment Task (with performance criteria)			
Assessment Task 1 : Manage work timeframes		Description of assessment task 1	
During the practical assessment, candidate demonstrated the following:			
1	Performance criteria1:	Yes	No
2	Performance criteria2:		
3	Performance criteria3:		
4	Performance criteria4:		
5	Performance criteria5		
6	Performance criteria6:		
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>	

Each Assessment Task (with performance criteria)				
Assessment Task 2 : Manage to convene meeting		Description of assessment task 2:		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 3: Decision making at workplace		Description of assessment task 3:		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 4: Set and meet own work priorities at instent		Description of assessment task 4:		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 5: Develop and maintain professional competence		Description of assessment task 5:		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 6: Follow and implement work safety requirements		Description of assessment task 6:		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio(if any)		Description of portfolio		
Current <input type="checkbox"/>	Sufficient <input type="checkbox"/>	Authentic <input type="checkbox"/>	Valid <input type="checkbox"/>	Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance criteria 1			
2	Performance criteria 2			
3	Performance criteria 3			
4			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

WRITTEN ASSESSMENT

Question	Candidate's answer
8.	
9.	
10.	
11.	
12.	
13.	
14.	

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 4	Version:
Module Title: Perform Advanced Communication	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:
Guidance for Candidate	<p>To meet the required standard of assessment, you have to complete the following assessment tasks within the given time frame (for practical demonstration & assessment):</p> <p>Assessment Task 1. Demonstrate professional skills Assessment Task 2. Plan and Organize work Assessment Task 3. Provide trainings at workplace</p> <p>And complete:</p> <p>5. Knowledge assessment test (Written or Oral) 6. Portfolios at the time of assessment (if any)</p>
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1</p> <p>Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5: Performance Criteria 6:</p>
	<p>Assessment Task 2</p> <p>Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p>
	<p>Assessment Task 3</p> <p>Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p>

	<p>Portfolios required at the time of assessment (if any) like trainees assignment, Projects/Jobs etc:</p> <p>Performance criteria 1 for the evaluation of portfolio Performance criteria 2 for the evaluation of portfolio Performance criteria 3 for the evaluation of portfolio</p>
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Continued on following page

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

(Formative Assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

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

Each Assessment Task (with performance criteria)					
Assessment Task 1 : Demonstrate professional skills	Description of assessment task 1				
During the practical assessment, candidate demonstrated the following:			Yes	No	Remarks
1	Performance criteria1:				
2	Performance criteria2:				
3	Performance criteria3:				
4	Performance criteria4:				
5	Performance criteria5:				
6	Performance criteria6:				
Competent <input type="checkbox"/>			Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 2 : Plan and Organize work		Description of assessment task 2:		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 3 : Provide trainings at workplace		Description of assessment task 3:		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio(if any)		Description of portfolio			
Current <input type="checkbox"/>		Sufficient <input type="checkbox"/>	Authentic <input type="checkbox"/>	Valid <input type="checkbox"/>	Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks	
1	Performance criteria 1				
2	Performance criteria 2				
3	Performance criteria 3				
4				
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>			

Assessors Judgment Guide
TITLE OF QUALIFICATION
(Formative Assessment)

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 4	Version:
Module Title: Perform Advanced Communication	Assessment Date (DD/MM/YY):		

Guidance for Candidate	To complete your assessment for this Curriculum Module, you need to answer the questions on the following pages successfully.
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Assessors Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level:	Version:
Module Title: Perform Advanced Communication	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
15.	
16.	
17.	
18.	
19.	
20.	
21.	

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 1	Version:
Module Title: Develop Advance Computer Application Skills	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:								
Guidance for Candidate	<p>To meet the required standard of assessment, you have to complete the following assessment tasks within the given time frame (for practical demonstration & assessment):</p> <table border="0" data-bbox="427 819 1326 943"> <tr> <td>Assessment Task 1.</td> <td>Manage Information System to complete a task</td> </tr> <tr> <td>Assessment Task 2.</td> <td>Prepare Presentation using computers</td> </tr> <tr> <td>Assessment Task 3.</td> <td>Use Microsoft Access to manage database</td> </tr> <tr> <td>Assessment Task 4.</td> <td>Develop graphics for Design</td> </tr> </table> <p>And complete:</p> <ol style="list-style-type: none"> 7. Knowledge assessment test (Written or Oral) 8. Portfolios at the time of assessment (if any) 	Assessment Task 1.	Manage Information System to complete a task	Assessment Task 2.	Prepare Presentation using computers	Assessment Task 3.	Use Microsoft Access to manage database	Assessment Task 4.	Develop graphics for Design
Assessment Task 1.	Manage Information System to complete a task								
Assessment Task 2.	Prepare Presentation using computers								
Assessment Task 3.	Use Microsoft Access to manage database								
Assessment Task 4.	Develop graphics for Design								
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1</p> <p>Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5: Performance Criteria 6:</p>								
	<p>Assessment Task 2</p> <p>Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p>								
	<p>Assessment Task 3</p> <p>Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p>								

	<p>Assessment Task 4: Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p>
	<p>Portfolios required at the time of assessment (if any) like trainees assignment, Project job etc:</p> <p style="padding-left: 40px;">Performance criteria 1 for the evaluation of portfolio Performance criteria 2 for the evaluation of portfolio Performance criteria 3 for the evaluation of portfolio </p>

Continued on following page

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

(Formative Assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

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

Each Assessment Task (with performance criteria)			
Assessment Task 1 : Manage Information System to complete a task		Description of assessment task 1	
During the practical assessment, candidate demonstrated the following:			
	Yes	No	Remarks
1	Performance criteria1:		
2	Performance criteria2:		
3	Performance criteria3:		
4	Performance criteria4:		
5	Performance criteria5		
6	Performance criteria6:		
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>	

Each Assessment Task (with performance criteria)				
Assessment Task 2 : Prepare Presentation using computers		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 3: Use Microsoft Access to manage database		Description of assessment task 3		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 4: Develop graphics for Design		Description of assessment task 4		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio(if any)		Description of portfolio		
Current <input type="checkbox"/>	Sufficient <input type="checkbox"/>	Authentic <input type="checkbox"/>	Valid <input type="checkbox"/>	Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance criteria 1			
2	Performance criteria 2			
3	Performance criteria 3			
4			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessors Judgment Guide
TITLE OF QUALIFICATION
(Formative Assessment)

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 1	Version:
Module Title: Develop Advance Computer Application Skills	Assessment Date (DD/MM/YY):		

Guidance for Candidate	To complete your assessment for this Curriculum Module, you need to answer the questions on the following pages successfully.
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WRITTEN ASSESSMENT

Question	Candidate's answer
22.	
23.	
24.	
25.	
26.	
27.	
28.	

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 4	Version:
Module Title: Manage Human Resources	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:
Guidance for Candidate	<p>To meet the required standard of assessment, you have to complete the following assessment tasks within the given time frame (for practical demonstration & assessment):</p> <p>Assessment Task 1. Determine strategies for delivery of human resource services Assessment Task 2. Manage the delivery of human resource services Assessment Task 3. Evaluate human resource service delivery Assessment Task 4. Manage integration of business ethics in human resource practices</p> <p>And complete:</p> <p>9. Knowledge assessment test (Written or Oral) 10. Portfolios at the time of assessment (if any)</p>
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1 Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5: Performance Criteria 6:</p> <p>Assessment Task 2 Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p> <p>Assessment Task 3 Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p>

	<p>Assessment Task 4:</p> <p>Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p> <hr/> <p>Portfolios required at the time of assessment (if any) like trainees assignment, Projects/Jobs etc:</p> <p>Performance criteria 1 for the evaluation of portfolio Performance criteria 2 for the evaluation of portfolio Performance criteria 3 for the evaluation of portfolio </p>
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Continued on following page

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

(Formative Assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

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

Each Assessment Task (with performance criteria)			
Assessment Task 1 : Determine strategies for delivery of human resource services		Description of assessment task 1	
During the practical assessment, candidate demonstrated the following:		Yes	No
1	Performance criteria 1:		
2	Performance criteria 2:		
3	Performance criteria 3:		
4	Performance criteria 4:		
5	Performance criteria 5:		
6	Performance criteria 6:		
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>	

Each Assessment Task (with performance criteria)				
Assessment Task 2 : Manage the delivery of human resource services		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 3: Evaluate human resource service delivery		Description of assessment task 3		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 4: Manage integration of business ethics in human resource practices		Description of assessment task 4:		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio(if any)		Description of portfolio			
Current <input type="checkbox"/>		Sufficient <input type="checkbox"/>	Authentic <input type="checkbox"/>	Valid <input type="checkbox"/>	Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks	
1	Performance criteria 1				
2	Performance criteria 2				
3	Performance criteria 3				
4				
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>			

Assessor's Judgment Guide
TITLE OF QUALIFICATION
(Formative Assessment)

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 4	Version:
Module Title: Manage Human Resources	Assessment Date (DD/MM/YY):		

Guidance for Candidate	To complete your assessment for this Curriculum Module, you need to answer the questions on the following pages successfully.
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Assessors Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level:4	Version:
Module Title: Manage Human Resources	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
29.	
30.	
31.	
32.	
33.	
34.	
35.	

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 4	Version:
Module Title: Develop Enterprenueurial Skills	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:
Guidance for Candidate	<p>To meet the required standard of assessment, you have to complete the following assessment tasks within the given time frame (for practical demonstration & assessment):</p> <p>Assessment Task 1. Develop a business plan Assessment Task 2. Collect information regarding funding sources Assessment Task 3. Develop a marketing plan Assessment Task 4. Develop basic business communication skills</p> <p>And complete:</p> <p>11. Knowledge assessment test (Written or Oral) 12. Portfolios at the time of assessment (if any)</p>
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1 Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5: Performance Criteria 6:</p> <p>Assessment Task 2 Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p> <p>Assessment Task 3 Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p>

	<p>Assessment Task 4: Performance Criteria 1: Performance Criteria 2: Performance Criteria 3: Performance Criteria 4: Performance Criteria 5:</p>
	<p>Portfolios required at the time of assessment (if any) like trainees assignment, Projects/Jobs etc: Performance criteria 1 for the evaluation of portfolio Performance criteria 2 for the evaluation of portfolio Performance criteria 3 for the evaluation of portfolio </p>

Continued on following page

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

(Formative Assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

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

Each Assessment Task (with performance criteria)			
Assessment Task 1 : Develop a business plan		Description of assessment task 1	
During the practical assessment, candidate demonstrated the following:			
Yes	No	Remarks	
1	Performance criteria1:		
2	Performance criteria2:		
3	Performance criteria3:		
4	Performance criteria4:		
5	Performance criteria5		
6	Performance criteria6:		
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>	

Each Assessment Task (with performance criteria)				
Assessment Task 2 : Collect information regarding funding sources		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria 2:			
3	Performance criteria 3:			
4	Performance criteria 4:			
5	Performance criteria 5:			
6	Performance criteria 6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 3: Develop a marketing plan		Description of assessment task 3		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria 2:			
3	Performance criteria 3:			
4	Performance criteria 4:			
5	Performance criteria 5:			
6	Performance criteria 6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 4: Develop basic business communication skills		Description of assessment task 4		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5			
6	Performance criteria6:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio(if any)		Description of portfolio		
Current <input type="checkbox"/>	Sufficient <input type="checkbox"/>	Authentic <input type="checkbox"/>	Valid <input type="checkbox"/>	Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance criteria 1			
2	Performance criteria 2			
3	Performance criteria 3			
4			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

WRITTEN ASSESSMENT

Question	Candidate's answer
36.	
37.	
38.	
39.	
40.	
41.	
42.	

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code: 0713001135	Level: 4	Version:
Module Title: Repair Replace Allied Parts of Machine (Motor)	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:.....
Guidance for Candidate	<p>To meet the required standard of assessment, you have to complete the following assessment tasks within the given time frame (for practical demonstration & assessment):</p> <ol style="list-style-type: none"> 1. Assessment Task 1:Prepare for work to repair / replace allied parts of machine (Motor) 2. Assessment Task 2:Replace Bearing 3. Assessment Task 3:Replace Bush 4. Assessment Task 4: Replace Carbon Brushes 5. Assessment Task 5: Repair/Replace Commutator / Slip rings 6. Assessment Task 6: Check Rotor and its shaft 7. Assessment Task 7: Repair/Replace Centrifugal Switch (Clutch) of Motor 8. Assessment Task 8:Replace Capacitor of Motor 9. Assessment Task 9:Repair/Replace terminals of Motor <p>And complete:</p> <ol style="list-style-type: none"> 13. Knowledge assessment test (Written or Oral) 14. Portfolios at the time of assessment (if any)
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1</p> <p>Performance Criteria 1: Identify the required PPE's Performance Criteria 2: Collect the required PPE's Performance Criteria 3: Identify the required tools and equipment Performance Criteria 4: Collect the required tools and equipment Performance Criteria 5: Ensure functional condition of PPE's/Tools and equipment Performance Criteria 6:Ensure safe working conditions</p> <ul style="list-style-type: none"> ➤ Clear Passage ➤ Cleanliness ➤ Adequate light ➤ Ventilation <p>Assessment Task 2</p> <p>Performance Criteria 1: Wear the required PPE's Performance Criteria 2: Pick the required tools and equipment Performance Criteria 3: Remove the faulty bearing Performance Criteria 4: Collect the relevant number bearing from store Performance Criteria 5: Replace the bearing Performance Criteria 6:Update record</p>

	<p>Assessment Task 3</p> <p>Performance Criteria 1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Remove the faulty bush</p> <p>Performance Criteria 4: Collect the relevant size of bush from store</p> <p>Performance Criteria 5: Replace the bush</p> <p>Performance Criteria 6: Update record</p>
	<p>Assessment Task 4</p> <p>Performance Criteria 1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Remove the faulty carbon brush</p> <p>Performance Criteria 4: Collect the relevant size and material of carbon brush from store</p> <p>Performance Criteria 5: Replace the carbon brush</p> <p>Performance Criteria 6: Update record</p>
	<p>Assessment Task 5</p> <p>Performance Criteria 1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Check smoothness of the surface of the commutator/slip rings</p> <p>Performance Criteria 4: Perform required surfacing of commutator/slip rings</p> <p>Performance Criteria 5: Perform undercutting of mica between segments of commutator with hacksaw blade</p> <p>Performance Criteria 6: Perform cleaning of commutator/slip rings</p> <p>Performance Criteria 7: Remove short circuited commutator/slip rings from the motor shaft</p> <p>Performance Criteria 8: Collect the relevant size of commutator/slip ring from store</p> <p>Performance Criteria 9: Replace the commutator/slip rings</p> <p>Performance Criteria 10: Update record</p>
	<p>Assessment Task 6</p> <p>Performance Criteria 1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Check smoothness of the surface of the rotor shaft</p> <p>Performance Criteria 4: Check size of shaft according to inner diameter of bearing</p> <p>Performance Criteria 5: Perform welding of shaft for sizing if required</p> <p>Performance Criteria 6: Perform surfacing of rotor shaft to acquire correct bearing size</p> <p>Performance Criteria 7: Check balance of rotor shaft</p> <p>Performance Criteria 8: Perform balancing of rotor shaft if required</p> <p>Performance Criteria 9: Perform cleaning of rotor shaft</p> <p>Performance Criteria 10: Update record</p>
	<p>Assessment Task 7</p> <p>Performance Criteria 1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Check working of centrifugal switch</p> <p>Performance Criteria 4: Set working of centrifugal switch</p> <p>Performance Criteria 5: Check contact points of centrifugal switch</p> <p>Performance Criteria 6: Perform surfacing of contact points of centrifugal switch</p> <p>Performance Criteria 7: Perform cleaning of contact points of centrifugal switch</p> <p>Performance Criteria 8: Update record</p>

	<p>Assessment Task 8</p> <p>Performance Criteria 1. Wear the required PPE's Performance Criteria 2. Pick the required tools and equipment Performance Criteria 3. Check the capacitor Performance Criteria 4. Select the required capacitor size Performance Criteria 5. Collect the capacitor from main store Performance Criteria 6. Replace the faulty capacitor Performance Criteria 7. Update record</p>
	<p>Assessment Task 9</p> <p>Performance Criteria 1: Wear the required PPE's Performance Criteria 2: Pick the required tools and equipment Performance Criteria 3: Perform physical Checking of the terminal plate and terminals of motor Performance Criteria 4: Perform cleaning of terminals and terminal plate to remove carbon dust Performance Criteria 5: Check fixing of terminal plate Performance Criteria 6: Check the terminal linking strips Performance Criteria 7: Repair/Replace the faulty part Performance Criteria 8: Update record</p>
	<p>Portfolios required at the time of assessment (if any) like trainees assignment, Projects/Jobs etc:</p> <p>Performance criteria 1 for the evaluation of portfolio Performance criteria 2 for the evaluation of portfolio Performance criteria 3 for the evaluation of portfolio </p>

Continued on following page

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

(Formative Assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

Assessment Summary (to be filled by the assessor)								
Activity	Method					Result		
	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent	
Nature of Activity								
Practical Skill Demonstration			✓		✓			
Knowledge Assessment	✓	✓						
Other Requirement				✓				
Each Assessment Task (with performance criteria)								
Assessment Task 1 :Prepare for work to repair / replace allied parts of machine (Motor)				Description of assessment task 1				
During the practical assessment, candidate demonstrated the following:					Yes	No	Remarks	
1	Performance criteria 1: Identify the required PPE's							
2	Performance criteria 2: Collect the required PPE's							
3	Performance criteria 3: Identify the required tools and equipment							
4	Performance criteria 4: Collect the required tools and equipment							
5	Performance criteria 5: Ensure functional condition of PPE's/Tools and equipment							
6	Performance criteria 6:Ensure safe working conditions ➤ Clear Passage ➤ Cleanliness ➤ Adequate light ➤ Ventilation							
Competent <input type="checkbox"/>				Not Yet Competent <input type="checkbox"/>				

Assessment Task 2: Replace Bearing		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Wear the required PPE's			
2	Performance criteria 2: Pick the required tools and equipment			
3	Performance criteria 3: Remove the faulty bearing			
4	Performance criteria 4: Collect the relevant number bearing from store			
5	Performance criteria 5: Replace the bearing			
6	Performance criteria 6: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3: Replace Bush		Description of assessment task 3		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Wear the required PPE's			
2	Performance criteria 2: Pick the required tools and equipment			
3	Performance criteria 3: Remove the faulty bush			
4	Performance criteria 4: Collect the relevant size of bush from store			
5	Performance criteria 5: Replace the bush			
6	Performance criteria 6: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4: Replace Carbon Brushes		Description of assessment task 4		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Wear the required PPE's			
2	Performance criteria 2: Pick the required tools and equipment			
3	Performance criteria 3: Remove the faulty carbon brush			
4	Performance criteria 4: Collect the relevant size and material of carbon brush from store			
5	Performance criteria 5: Replace the carbon brush			
6	Performance criteria 6: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 5: Repair/Replace Commutator / Sliprings		Description of assessment task 5		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1: Wear the required PPE's			
2	Performance criteria2: Pick the required tools and equipment			
3	Performance criteria3: Check smoothness of the surface of the commutator/slip rings			
4	Performance criteria4: Perform required surfacing of commutator/slip rings			
5	Performance criteria5: Perform undercutting of mica between segments of commutator with hacksaw blade			
6	Performance criteria6: Perform cleaning of commutator/slip rings			
7	Performance criteria7: Remove short circuited commutator/slip rings from the motor shaft			
8	Performance criteria8: Collect the relevant size of commutator/slip ring from store			
9	Performance criteria9: Replace the commutator/slip rings			
10	Performance criteria10: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 6: Check Rotor and its Shaft		Description of assessment task 6		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Wear the required PPE's			
2	Performance criteria 2: Pick the required tools and equipment			
3	Performance criteria 3: Check smoothness of the surface of the rotor shaft			
4	Performance criteria 4: Check size of shaft according to inner diameter of bearing			
5	Performance criteria 5: Perform welding of shaft for sizing if required			
6	Performance criteria 6: Perform surfacing of rotor shaft to acquire correct bearing size			
7	Performance criteria 7: Check balance of rotor shaft			
8	Performance criteria 8: Perform balancing of rotor shaft if required			
9	Performance criteria 9: Perform cleaning of rotor shaft			
10	Performance criteria 10: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 7: Repair/Replace Centrifugal Switch (Clutch) of Motor		Description of assessment task 7		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Wear the required PPE's			
2	Performance criteria 2: Pick the required tools and equipment			
3	Performance criteria 3: Check working of centrifugal switch			
4	Performance criteria 4: Set working of centrifugal switch			
5	Performance criteria 5: Check contact points of centrifugal switch			
6	Performance criteria 6: Perform surfacing of contact points of centrifugal switch			
7	Performance criteria 7: Perform cleaning of contact points of centrifugal switch			
8	Performance criteria 8: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 8: Replace Capacitor of Motor		Description of assessment task 8		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance Criteria 1. Wear the required PPE's			
2	Performance Criteria 2. Pick the required tools and equipment			
3	Performance Criteria 3. Check the capacitor			
	Performance Criteria 4. Select the required capacitor size			
	Performance Criteria 5. Collect the capacitor from main store.			
4	Performance Criteria 6. Replace the faulty capacitor			
5	Performance Criteria 7. Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 9: Repair/Replace terminals of Motor		Description of assessment task 9		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Wear the required PPE's			
2	Performance criteria 2: Pick the required tools and equipment			
3	Performance criteria 3: Perform physical Checking of the terminal plate and terminals of motor			
4	Performance criteria 4: Perform cleaning of terminals and terminal plate to remove carbon dust			
5	Performance criteria 5: Check fixing of terminal plate			
6	Performance criteria 6: Check the terminal linking strips			
7	Performance criteria 7: Repair/Replace the faulty part			
8	Performance criteria 8: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio(if any)		Description of portfolio			
Current <input type="checkbox"/>		Sufficient <input type="checkbox"/>	Authentic <input type="checkbox"/>	Valid <input type="checkbox"/>	Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks	
1	Performance criteria 1				
2	Performance criteria 2				
3	Performance criteria 3				
4				
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>			

Knowledge Assessment
TITLE OF QUALIFICATION
(Formative Assessment)

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 4	Version:
	Module Title: Repair Replace Allied Parts of Machine (Motor)		Assessment Date (DD/MM/YY):

Guidance for Candidate	To complete your assessment for this Curriculum Module, you need to answer the questions on the following pages successfully.
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Assessors Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:

Title of Qualification: Electrical Machine Winding Technician	CS Code:	Level: 4	Version:
Competency Standard Title: Repair / Replace allied parts of Machine (Motor)	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
43. Why bearing are installed in machines?	Bearing are used in machines to provide smooth and low friction running / movement
44. What types of bearings are used in machines?	Two types of bearings are used in machines. 1- Ball bearing 2- Roller bearing
45. Material of bushes is?	Bushes are made with brass
46. Why carbon brushes are used in machines?	Carbon brushes are used to make electric connection in rotating / sliding contact. The brushes send electrical current to the commutator and are typically made of carbon or graphite.
47. Material used to lubricate bearing is?	Bearings in some applications use oil, but grease is the lubricant of choice for 80 to 90% of bearings. Grease consists of about 85% mineral or synthetic oil with thickeners rounding out the rest of the grease volume. The thickeners are usually lithium, calcium or sodium-based metallic soaps.
48. What is meant by bush and how it is lubricated?	A plain bearing, or more commonly sliding bearing is the simplest type, is bushing, also known as a bush. It is an independent plain bearing that is inserted into a housing to provide a bearing surface for rotary applications; The grooves help lubrication enter the bearing, bushes are lubricated with liquids like mineral oil or vegetable oils, semi-solids like grease, and solids like graphite or molybdenum disulfide. These lubricants are used to reduce friction and wear, dissipate the frictional heat and to protect against corrosion.
49. What is the function of commutator?	To keep the torque on a DC motor from reversing every time the coil moves through the plane perpendicular to the magnetic field, a split-ring device called a commutator is used to reverse the current at that point. The commutation in DC machine or more specifically commutation in DC generator is the process in which generated alternating current in the armature winding of a dc machine is converted into direct current after going through the commutator and the stationary brushes.
50. Material of rotor shaft is?	Ordinary rotor shafts are made with mild steel, but when high strength is required, alloy steel such as nickel, nickel-chromium or chromium-vanadium steel is used.
51. What is capacitor?	A capacitor is made up of two metallic plates. With a dielectric material in between the plates. When we apply a voltage over the two plates, an electric field is created. Positive charge will collect on one plate and negative charge on the other.

Question	Candidate's answer
52. Why terminals are used in machines?	Terminals in machines are used to provide sound electrical connection between supply and winding. Terminal blocks are used to secure and/or terminate wires and, in their simplest form, consist of several individual terminals arranged in a long strip. Terminals are useful for connecting machine winding to electrical power, for connecting electrical switches and outlets to the mains.

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code: 0713001136	Level: 4	Version:
Module Title: Repair Replace Allied Parts of Machine (Transformer)	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:.....
Guidance for Candidate	<p>To meet the required standard of assessment, you have to complete the following assessment tasks within the given time frame (for practical demonstration & assessment):</p> <p> 10. Assessment Task 1: Prepare for work to repair / replace allied parts of machine (Transformer) 11. Assessment Task 2: Collect the required materials/parts 12. Assessment Task 3: Perform filtration of Transformer Oil 13. Assessment Task 4: Replace Transformer Oil 14. Assessment Task 5: Perform De- Hydration of Silica Gel 15. Assessment Task 6: Repair / Replace Transformer Bushing 16. Assessment Task 7: Repair/ Replace Tap Changer 17. Assessment Task 8:Check main Tank body of Transformer for leakage 18. Assessment Task 9:Repair/Replace Buchholz Relay </p> <p>And complete:</p> <p> 15. Knowledge assessment test (Written or Oral) 16. Portfolios at the time of assessment (if any) </p>
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1</p> <p> Performance Criteria 1: Identify the required PPE's Performance Criteria 2: Collect the required PPE's Performance Criteria 3: Identify the required tools and equipment Performance Criteria 4: Collect the required tools and equipment Performance Criteria 5: Ensure functional condition of PPE's/Tools and equipment Performance Criteria 6:Ensure safe working conditions </p> <ul style="list-style-type: none"> ➤ Clear Passage ➤ Cleanliness ➤ Adequate light ➤ Ventilation <p>Assessment Task 2</p> <p> Performance Criteria 1: Collect list of the estimated material/parts for repair Performance Criteria 2: Check availability of the required parts/material in the store Performance Criteria 3:Place purchase order for the deficient parts/materials Performance Criteria 4: Collect the required parts/materials from the store </p>

	<p>Assessment Task 3</p> <p>Performance Criteria 1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Collect oil sample</p> <p>Performance Criteria 4: Check the dielectric strength of the oil</p> <p>Performance Criteria 5: Drain out oil from transformer tank</p> <p>Performance Criteria 6: Perform filtration of transformer oil</p> <p>Performance Criteria 7: Update record</p>
	<p>Assessment Task 4</p> <p>Performance Criteria 1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Drain out old transformer oil from tank</p> <p>Performance Criteria 4: Arrange new transformer oil</p> <p>Performance Criteria 5: Refill in new transformer oil in tank</p> <p>Performance Criteria 6: Update record</p>
	<p>Assessment Task 5</p> <p>Performance Criteria 1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Open breather of transformer</p> <p>Performance Criteria 4: Remove silica gel from breather of transformer</p> <p>Performance Criteria 5: Spread removed silica gel under sun light over a sheet for de-hydration</p> <p>Performance Criteria 6: Heat removed silica gel in oven up to 120C⁰ for complete de-hydration</p> <p>Performance Criteria 7: Perform de-hydration of silica gel</p> <p>Performance Criteria 8: Update record</p>
	<p>Assessment Task 6</p> <p>Performance Criteria 1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Perform physical Checking of transformer bushing</p> <p>Performance Criteria 4: Perform cleaning of transformer bushing to remove carbon dust</p> <p>Performance Criteria 5: Check fixing of transformer bushing</p> <p>Performance Criteria 6: Replace the damaged transformer bushing</p> <p>Performance Criteria 7: Update record</p>
	<p>Assessment Task 7</p> <p>Performance Criteria 1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Perform physical Checking of the tap changer</p> <p>Performance Criteria 4: Perform cleaning of contact terminals of tap changer to remove carbon dust</p> <p>Performance Criteria 5: Check fixing of tap changer</p> <p>Performance Criteria 6: Check the connections of linking cables</p> <p>Performance Criteria 7: Replace the faulty tap changer</p> <p>Performance Criteria 8: Update record</p>
	<p>Assessment Task 8</p> <p>Performance Criteria 1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Perform physical Checking of the tank</p> <p>Performance Criteria 4: Locate leakage point in main tank of transformer</p> <p>Performance Criteria 5: Drain out oil from main tank</p> <p>Performance Criteria 6: Refer for welding of the leakage point</p> <p>Performance Criteria 7: Re-fill oil in main tank</p> <p>Performance Criteria 8: Perform physical Checking of the tank</p> <p>Performance Criteria 9: Update record</p>

	<p>Assessment Task 9</p> <p>Performance Criteria 1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Check Buchholz relay</p> <p>Performance Criteria 4: Remove Buchholz Relay from transformer</p> <p>Performance Criteria 5: Repair/Replace Buchholz relay</p> <p>Performance Criteria 6: Update record</p>
	<p>Portfolios required at the time of assessment (if any) like trainees assignment, Projects/Jobs etc:</p> <p>Performance criteria 1 for the evaluation of portfolio</p> <p>Performance criteria 2 for the evaluation of portfolio</p> <p>Performance criteria 3 for the evaluation of portfolio</p> <p>.....</p>

Continued on following page

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

(Formative Assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

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

Each Assessment Task (with performance criteria)				
Assessment Task 1 : Prepare for work to repair / replace allied parts of machine (Transformer)		Description of assessment task 1		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1: Identify the required PPE's			
2	Performance criteria2: Collect the required PPE's			
3	Performance criteria3: Identify the required tools and equipment			
4	Performance criteria4: Collect the required tools and equipment			
5	Performance criteria5: Ensure functional condition of PPE's/Tools and equipment			
6	Performance criteria6:Ensure safe working conditions <ul style="list-style-type: none"> ➤ Clear Passage ➤ Cleanliness ➤ Adequate light ➤ Ventilation 			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 2: Collect the required materials/parts		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Collect list of the estimated material/parts for repair			
2	Performance criteria 2: Check availability of the required parts/material in the store			
3	Performance criteria 3:Place purchase order for the deficient parts/materials			
4	Performance criteria 4: Collect the required parts/materials from the store			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3: Perform filtration of Transformer Oil		Description of assessment task 3		
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During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1: Wear the required PPE's			
2	Performance criteria2: Pick the required tools and equipment			
3	Performance criteria3: Collect oil sample			
4	Performance criteria4: Check the dielectric strength of the oil			
5	Performance criteria5: Drain out oil from transformer tank			
6	Performance criteria6: Perform filtration of transformer oil			
7	Performance criteria7: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4: Replace Transformer Oil		Description of assessment task 4		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Wear the required PPE's			
2	Performance criteria 2: Pick the required tools and equipment			
3	Performance criteria 3: Drain out old transformer oil from tank			
4	Performance criteria 4: Arrange new transformer oil			
5	Performance criteria 5: Refill in new transformer oil in tank			
6	Performance criteria 6: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 5: Perform De- Hydration of Silica Gel		Description of assessment task 5		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1: Wear the required PPE's			
2	Performance criteria2: Pick the required tools and equipment			
3	Performance criteria3:Open breather of transformer			
4	Performance criteria4: Remove silica gel from breather of transformer			
5	Performance criteria5: Spread removed silica gel under sun light over a sheet for de-hydration			
6	Performance criteria6: Heat removed silica gel in oven up to 120C ⁰ for complete de-hydration			
7	Performance criteria7:Perform de-hydration of silica gel			
8	Performance criteria8: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 6: Repair / Replace Transformer Bushing		Description of assessment task 6		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Wear the required PPE's			
2	Performance criteria 2: Pick the required tools and equipment			
3	Performance criteria 3: Perform physical Checking of transformer bushing			
4	Performance criteria 4: Perform cleaning of transformer bushing to remove carbon dust			
5	Performance criteria 5: Check fixing of transformer bushing			
6	Performance criteria 6: Replace the damaged transformer bushing			
7	Performance criteria 7: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 7: Repair/ Replace Tap Changer		Description of assessment task 7		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Wear the required PPE's			
2	Performance criteria 2: Pick the required tools and equipment			
3	Performance criteria 3: Perform physical Checking of the tap changer			
4	Performance criteria 4: Perform cleaning of contact terminals of tap changer to remove carbon dust			
5	Performance criteria 5: Check fixing of tap changer			
6	Performance criteria 6: Check the connections of linking cables			
7	Performance criteria 7: Replace the faulty tap changer			
8	Performance criteria 8: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task8: Check main Tank body of Transformer for leakage		Description of assessment task8		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1: Wear the required PPE's			
2	Performance criteria2: Pick the required tools and equipment			
3	Performance criteria3: Perform physical Checking of the tank			
4	Performance criteria4:Locate leakage point in main tank of transformer			
5	Performance criteria5:Drain out oil from main tank			
6	Performance criteria6: Refer for welding of the leakage point			
7	Performance criteria7: Re-fill oil in main tank			
8	Performance criteria8: Perform physical Checking of the tank			
9	Performance criteria9: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task9: Repair/Replace Buchholz Relay		Description of assessment task9		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria1: Wear the required PPE's			
2	Performance criteria2: Pick the required tools and equipment			
3	Performance criteria3: Check Buchholz relay			
4	Performance criteria4: Remove Buchholz Relay from transformer			
5	Performance criteria5:Repair/Replace Buchholz relay			
6	Performance criteria6: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio(if any)		Description of portfolio		
Current <input type="checkbox"/>	Sufficient <input type="checkbox"/>	Authentic <input type="checkbox"/>	Valid <input type="checkbox"/>	Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance criteria 1			
2	Performance criteria 2			
3	Performance criteria 3			
4			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

WRITTEN ASSESSMENT

Question	Candidate's answer
53. What is the function of transformer?	Transformers are devices used in electrical circuits to change the AC voltage of electricity flowing in the circuit. Transformers can be used either to increase the voltage (called "stepping up") or decrease the voltage ("step down"). It works on mutual induction.
54. What are the main parts of transformer?	<p>These are the basic components of a transformer:</p> <ul style="list-style-type: none"> • Laminated core • Windings • Insulating materials • Transformer oil • Tap changer • Oil Conservator • Breather • Cooling tubes
55. Why oil is used in transformer?	The basic functions of the oil used in transformers are heat conduction and electrical insulation. Transformer oil or insulating oil is oil that is stable at high temperatures and has excellent electrical insulating properties.
56. What types of oils are used in transformer?	It is normally obtained by fractional distillation and subsequent treatment of crude petroleum. Many mineral oils as well as chemicals have been used. Notable ones being Askarel and Pyrochlore.
57. What properties are required in transformer oil?	Synthetic transformer oil like chlorinated diphenyl has excellent properties like chemical stability, non-oxidizing, good dielectric strength, moisture repellent, reduced risk due to fire and explosion. Insulating property
58. Why Transformer Oil Test is performed?	Transformer Oil Test is used to check the strength of Di-Electric Constant.
59. Why transformer oil is filtered?	Transformer oil filtering is an important process which eliminates solid particles, dissolved gasses, and dissolved water. The electrical properties of the oil can be enhanced by filtering, dehydration, and degassing. Oil Filtering keeps the transformer in good condition and increases its life.
60. Why silica gel is used in transformer?	Silica gel is used in transformer to avoid entry of moisture air in to the transformer. Silica gel crystals absorb the moisture in the air and allow dry air in to the transformer.
61. What is the colour of silica gel when it is installed?	Silica gel will be blue when installed or dry.

Question	Candidate's answer
62. What is the colour of silica gel when it has moisture and needs to be de-hydrated?	Silica gel colour will be changed to pink when it has moisture in it and needs to be de-hydrated.
63. Why bushings are used in transformer?	Bushing is an insulated device that allows an electrical conductor to pass safely through a grounded conducting barrier such as the case of a transformer. Bushings are typically made from porcelain; though other insulating materials are also possible, generally porcelain is used.
64. Why tap changer is used in transformer?	The output voltage of transformers varies according to its input voltage and the load. During loaded conditions, the voltage on the output terminal decreases, whereas during off-load conditions the output voltage increases. In order to balance the voltage variations, tap changers are used. Tap changers can be either on-load tap changers or off-load tap changers. In an on-load tap changer, the tapping can be changed without isolating the transformer from the supply. In an off-load tap changer, it is done after disconnecting the transformer. Automatic tap changers are also available.
65. What is the function of cooling tubes of main tank of transformer?	Cooling tubes are used to cool the transformer oil. The transformer oil is circulated through the cooling tubes. The circulation of the oil may either be natural or forced. In natural circulation, when the temperature of the oil raises the hot oil naturally rises to the top and the cold oil sinks downward. Thus the oil naturally circulates through the tubes. In forced circulation, an external pump is used to circulate the oil.
66. Why Buchholz relay is used in transformer?	The <u>Buchholz Relay</u> is a protective device located in connecting pipe from the main tank to the conservator tank. It is used to sense the faults occurring inside the transformer. It is a simple relay that is operated by the gases emitted during the decomposition of transformer oil during internal faults. It helps in sensing and protecting the transformer from internal faults.

(Summative Assessment)

Instruction Sheet for the Candidate

Title of Qualification: Electrical Machine Winding Technician	CS Code:	Level: 4	Version:
Competency Standard Title: Repair/Replace allied parts of Machine(Motor) Repair/replace allied parts of Machine (Transformer)	Assessment Date (DD/MM/YY):		
Purpose of Assessment:	Summative Assessment		

Candidate Details	Name: Registration/Roll Number:.....
Guidance for Candidate	<p>To meet this standard, you are required to complete the following within the given time frame,4 Hrs (for practical demonstration & assessment):</p> <p>Assessment Task 1: Repair/replace the worn out/loose Rotar Shaft and replace the faulty Bearing of Motor</p> <p>Assessment Task 2: Repair/replace the worn out/flashed contact of Tap changer and replace the damaged bushing of Transformer</p> <p>And complete:</p> <p style="padding-left: 40px;">17. Knowledge assessment test (Written or Oral)</p> <p style="padding-left: 40px;">18. Portfolios at the time of assessment (if any)</p>
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1</p>

	<p>Performance Criteria 1. Identify the required tools , equipment & PPE's</p> <p>Performance Criteria 2. Check functional condition of the required tools ,equipment & PPE's.</p> <p>Performance Criteria 3. Use the required tools equipment & PPE's.</p> <p>Performance Criteria 4. Ensure safe working conditions</p> <p>a. Clear Passage</p> <p>b. Cleanliness</p> <p>c. Adequate light</p> <p>d. Ventilation</p> <p>Performance Criteria 5. Inspect the bearing for</p> <p>a. noise</p> <p>b. Axial/Radial Play/Looseness</p> <p>c. Stickiness</p> <p>d. Lubrication</p> <p>e. Breakage</p> <p>Performance Criteria 6. Remove cover of the motor</p> <p>Performance Criteria 7. Remove the faulty bearing</p> <p>Performance Criteria 8. Check smoothness of the surface of the rotor shaft</p> <p>Performance Criteria 9. Check size of shaft according to inner diameter of bearing</p> <p>Performance Criteria 10. Perform welding of shaft for sizing if required</p> <p>Performance Criteria 11. Perform surfacing of rotor shaft to acquire correct bearing size</p> <p>Performance Criteria 12. Check balance of rotor shaft</p> <p>Performance Criteria 13. Perform balancing of rotor shaft if required</p> <p>Performance Criteria 14. Perform cleaning of rotor shaft</p> <p>Performance Criteria 15. Collect the relevant number bearing from store</p> <p>Performance Criteria 16. Replace the bearing</p> <p>Performance Criteria 17. Perform test run of the Motor</p> <p>Performance Criteria 18. Perform fitting of the Motor</p> <p>Performance Criteria 19. Update record</p>
	<p>Assessment Task 2:</p> <p>Performance Criteria 1. Identify the required tools , equipment & PPE's</p> <p>Performance Criteria 2. Check functional condition of the required tools/equipment and PPE's</p> <p>Performance Criteria 3. Use the required tools equipment and PPE's as per job demand.</p> <p>Performance Criteria 4. Ensure safe working conditions</p> <p>Clear Passage</p> <p>Cleanliness</p> <p>Adequate light</p> <p>Ventilation</p> <p>Performance Criteria 5. Perform electrical isolation of Transformer.</p> <p>Performance Criteria 6. Perform physical Checking of transformer bushing</p> <p>Performance Criteria 7. Perform cleaning of transformer bushing to remove carbon dust</p> <p>Performance Criteria 8. Check fixing of transformer bushing</p> <p>Performance Criteria 9. Remove cover of transformer</p> <p>Performance Criteria 10. Remove the damaged bushing of transformer</p> <p>Performance Criteria 11. Arrange the bushing required for replacement</p> <p>Performance Criteria 12. Replace the damaged bushing of transformer</p> <p>Performance Criteria 13. Perform physical Checking of the tap changer</p> <p>Performance Criteria 14. Perform cleaning of contact terminals of tap changer to remove carbon dust</p>

	Performance Criteria 15. Check fixing of tap changer Performance Criteria 16. Check the connections of linking cables Performance Criteria 17. Remove the faulty tap changer of transformer Performance Criteria 18. Arrange the tap changer required for replacement Performance Criteria 19. Replace the faulty tap changer Performance Criteria 20. Perform fixing of the transformer's cover Performance Criteria 21. Update record
	Portfolios required at the time of assessment (if any) like trainees/students assignment, Projects/Jobs for Performance criteria 1 for the evaluation of portfolio Performance criteria 2 for the evaluation of portfolio

Continued on following page

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

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

Each Assessment Task (with performance criteria)

Assessment Task 1: Repair /replace the worn out/loose rotar shaft and replace the faulty bearing of Motor

Description of assessment task 1

During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Identify the required tools , equipment & PPE's			
2.	Check functional condition of the required tools ,equipment & PPE's.			
3.	Use the required tools equipment & PPE's.			
4.	Ensure safe working conditions <ul style="list-style-type: none"> • Clear Passage • Cleanliness • Adequate Light • Ventilation 			
5.	Inspect the bearing for <ul style="list-style-type: none"> • Noise • Axial / Radial Play / Looseness • Stickiness • Lubrication • Breakage 			
6.	Remove cover of the motor			
7.	Remove the faulty bearing			
8.	Check smoothness of the surface of the rotor shaft			
9.	Check size of shaft according to inner diameter of bearing			
10.	Perform welding of shaft for sizing if required			
11.	Perform surfacing of rotor shaft to acquire correct bearing size			
12.	Check balance of rotor shaft			
13.	Perform balancing of rotor shaft if required			
14.	Perform cleaning of rotor shaft			
15.	Collect the relevant number bearing from store			
16.	Replace the bearing			
17.	Perform test run of the Motor			
18.	Perform fitting of the Motor			
19.	Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 2: Repair/replace the worn out/flashed contact of Tap changer and replace the damaged bushing of Transformer		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Identify the required tools , equipment & PPE's			
2.	Check functional condition of the required PPE's/Tools, equipment.			
3.	Use the required tools equipment and PPE's as per job demand.			
4.	Ensure safe working conditions <ul style="list-style-type: none"> • Clear Passage • Cleanliness • Adequate Light • Ventilation 			
5.	Perform electrical isolation of Transformer.			
6.	Perform physical Checking of transformer bushing			
7.	Perform cleaning of transformer bushing to remove carbon dust			
8.	Check fixing of transformer bushing			
9.	Remove cover of transformer			
10.	Remove the damaged bushing of transformer			
11.	Arrange the bushing required for replacement			
12.	Replace the damaged bushing of transformer			
13.	Perform physical Checking of the tap changer			
14.	Perform cleaning of contact terminals of tap changer to remove carbon dust			
15.	Check fixing of tap changer			
16.	Check the connections of linking cables			
17.	Remove the faulty tap changer of transformer			
18.	Arrange the tap changer required for replacement			
19.	Replace the faulty tap changer			
20.	Perform fixing of the transformer's cover			
21.	Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio(if any)		Description of portfolio		
Current <input type="checkbox"/>	Sufficient <input type="checkbox"/>	Authentic <input type="checkbox"/>	Valid <input type="checkbox"/>	Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Performance criteria 1			
2	Performance criteria 2			
3	Performance criteria 3			
4			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Judgment Guide
TITLE OF QUALIFICATION
(Summative Assessment / Knowledge Part)

Title of Qualification: Electrical Machine Winding Technician	CS Code:	Level: 4	Version:
Competency Standard Title: Repair/Replace allied parts of Machine(Motor) Repair/replace allied parts of Machine (Transformer)	Assessment Date (DD/MM/YY):		

Guidance for Candidate	To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.
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Assessors Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor

Title of Qualification: Electrical Machine Winding Technician	CS Code:	Level:4	Version:
Competency Standard Title: Repair/Replace allied parts of Machine(Motor) Repair/replace allied parts of Machine (Transformer)	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
1. Define shaft of electric motor?	In an electric motor, the moving part is the rotor, which turns the shaft to deliver the mechanical power. The rotor usually has conductors laid into it that carry currents, which interact with the magnetic field of the stator to generate the forces that turn the shaft.
2. What materials are used in manufacturing motor shafts?	The material used for ordinary shafts is mild steel, but when high strength is required, alloy steel such as nickel, nickel-chromium or chromium-vanadium steel is used.
3. Which type of bearing is used in motors?	A ball bearing is usually used in electric motor
4. Why sealed bearings are used in motors?	The seals are important in stopping grease lubrication used in the bearings from leaking out.
5. What are common causes of motor damage?	Common causes of damage to a motor include physical impact, electrical or mechanical overload and poor maintenance. A slightly misaligned or bent motorshaft will produce a humming sound. A similar noise can be created if there is a minor fault in the transmission equipment attached to the motor shaft.
6. Why some motors have two capacitors?	Some single-phase AC electric motors require a "start capacitor" to energize the second-phase winding (auxiliary coil) to create a rotating magnetic field while the other capacitor is used as "run capacitor" and connected with running winding to improve its power factor.
7. What is importance of bearing fitting at shaft?	A line-to-line assembly is when the bore of the inner ring of the bearing and the outer diameter of the shaft are the same. With a tight fit, the bore of the inner ring of the bearing is slightly smaller than the outer shaft diameter.
8. How you can measure size of bearing?	We can measure the dimensions of a bearing by using a Vernier caliper or measuring accurately with a steel ruler. All bearings have an inner diameter (ID), an outside diameter (OD) and width (W). Bearings are referenced by these dimensions, in order: ID x OD x W.

Question	Candidate's answer
9. What are the dimensions of a 6203 bearing?	6203Ball Bearing have dimensions as 17x40x12mm
10. How do you choose a bearing?	<p>When choosing a bearing, we must consider following important factors;</p> <ul style="list-style-type: none"> • Axial or radial load • Sealing system. • Rotation speed. • Bearing life. • Rigidity. • Precision. • Vibration and impact.
11. What are tap changer and its purpose?	The purpose of a tap changer is to regulate the output voltage of a transformer. It does this by altering the number of turns in one winding and thereby changing the turn's ratio of the transformer. There are two types of transformer tap changers: an on-load tap changer (OLTC) and a de-energized tap changer (DETC).
12. Why tap changers are connected on HV side?	The tap changer is placed on high voltage side because of high voltage the current through the HV winding is less compared to LV windings, hence there is less "wear" on the tap changer contacts.
13. Why bushings are used in transformer?	A bushing is an insulated device that allows an electrical conductor to pass safely through a grounded conducting barrier such as the case of a transformer or circuit breaker. Bushings are typically made from porcelain; though other insulating materials are also possible, generally porcelain is used.

