

ELECTRICAL MACHINE WINDING TECHNICIAN



ASSESSMENT PACKAGE
National Vocational Certificate Level 3

Version 1 - September, 2018

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Document Version

September, 2018
Islamabad, Pakistan

ELECTRICAL MACHINE WINDING TECHNICIAN



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ASSESSMENT PACKAGE
National Vocational Certificate Level 3

Version 1 - September, 2018

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 3	Version:
Module Title: Apply Work Health and Safety Practices (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. Implement safe work practices at work place Assessment Task 2. Participate in hazard assessment activities a work place Assessment Task 3. Follow emergency procedures at workplace Assessment Task 4. Participate in OHS consultative processes</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>

	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
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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	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓		✓		
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)	
Assessment Task 1 : Implement safe work practices at work place	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"/>		

Assessment Task 2: Participate in hazard assessment activities a work place		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3: Follow emergency procedures at workplace		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:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4: Participate in OHS consultative processes		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:			
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: 3	Version:
Module Title: Apply Work Health and Safety Practices (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:3	Version:
Module Title: Apply Work Health and Safety Practices (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: 3	Version:
Module Title: Identify and Implement Workplace Policy and procedures	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. Identify workplace policy & procedures Assessment Task 2. Implement workplace policy & procedures Assessment Task 3. Communicate workplace policy & procedures Assessment Task 4. Review the implementation of workplace policy & procedures</p> <p>And complete:</p> <p>3. Knowledge assessment test (Written or Oral) 4. 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>

	Portfolios required at the time of assessment (if any) like trainees assignment, Project job 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
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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	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓		✓		
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)	
Assessment Task 1 : Identify workplace policy & procedures	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"/>		

Assessment Task 2: Implement workplace policy & procedures		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3: Communicate workplace policy& procedures		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4: Review the implementation of workplace policy & procedures		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5:			
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: 3	Version:
Module Title: Identify and Implement Workplace Policy and procedures	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:3	Version:
Module Title: Identify and Implement Workplace Policy and procedures	Assessment Date (DD/MM/YY):		

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: 3	Version:
Module Title: Communicate At Workplace	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"> <tr> <td>Assessment Task 1.</td> <td>Communicate within the organization</td> </tr> <tr> <td>Assessment Task 2.</td> <td>Communicate outside the organization</td> </tr> <tr> <td>Assessment Task 3.</td> <td>Communicate effectively in workgroup</td> </tr> <tr> <td>Assessment Task 4.</td> <td>Communicate in writing</td> </tr> </table> <p>And complete:</p> <ol style="list-style-type: none"> 5. Knowledge assessment test (Written or Oral) 6. Portfolios at the time of assessment (if any) 	Assessment Task 1.	Communicate within the organization	Assessment Task 2.	Communicate outside the organization	Assessment Task 3.	Communicate effectively in workgroup	Assessment Task 4.	Communicate in writing
Assessment Task 1.	Communicate within the organization								
Assessment Task 2.	Communicate outside the organization								
Assessment Task 3.	Communicate effectively in workgroup								
Assessment Task 4.	Communicate in writing								
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>								

	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
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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	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓		✓		
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)	
Assessment Task 1 : Communicate within the organization	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"/>		

Assessment Task 2: Communicate outside the organization		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3: Communicate effectively in workgroup		Description of assessment task 3		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4: Communicate in writing		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5:			
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: 3	Version:
Module Title: Communicate At Workplace	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:3	Version:
Module Title: Communicate At Workplace	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: 3	Version:
Module Title: Perform 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> <p>Assessment Task 1. Prepare In-page documents as per required information</p> <p>Assessment Task 2. Prepare Spreadsheets as per required information</p> <p>Assessment Task 3. Use MS Office as per required information</p> <p>Assessment Task 4. Perform computer graphics in basic applications</p> <p>Assessment Task 5. Create Email account for communications</p> <p>And complete:</p> <p>7. Knowledge assessment test (Written or Oral)</p> <p>8. 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>

	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
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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	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓		✓		
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)	
Assessment Task 1 : Prepare In-page documents as per required information	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"/>		

Assessment Task 2: Prepare Spreadsheets as per required information		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3: Use MS Office as per required information		Description of assessment task 3		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4: Perform computer graphics in basic applications		Description of assessment task 4:		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 5: Create Email account for communications		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5:			
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: 3	Version:
Module Title: Perform 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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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:3	Version:
Module Title: Perform Computer Application Skills	Assessment Date (DD/MM/YY):		

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: 3	Version:
Module Title: Manage Personal Finances	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 personal budget</p> <p>Assessment Task 2. Develop long term personal budget</p> <p>Assessment Task 3. Identify ways to maximize future finances</p> <p>And complete:</p> <p>9. Knowledge assessment test (Written or Oral)</p> <p>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</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>

	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
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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	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓		✓		
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)	
Assessment Task 1 : Develop a personal budget	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"/>		

Assessment Task 2: Develop long term personal budget		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1:			
2	Performance criteria2:			
3	Performance criteria3:			
4	Performance criteria4:			
5	Performance criteria5:			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 3 : Identify ways to maximize future finances		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: 3:	Version:
	Module Title: Manage Personal Finances		
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.		
This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level:3	Version:
	Module Title: Manage Personal Finances		
Assessment Date (DD/MM/YY):			

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:

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: 0713001129	Level: 3	Version:
Module Title: Disassemble Machine at Workplace	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"> Assessment Task 1: Prepare for work to disassemble machine at workplace Assessment Task 2: Shift Machine to work bench Assessment Task 3: Perform marking for Positions of Parts Assessment Task 4: Perform numbering on Machine parts as per Inventory Record Assessment Task 5: Remove the faulty parts Assessment Task 6: Ensure safe and Sequential Placing <p>And complete:</p> <ol style="list-style-type: none"> Knowledge assessment test (Written or Oral) 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</p> <p>Performance Criteria 2: Collect the required PPE's</p> <p>Performance Criteria 3: Identify the required tools and equipment</p> <p>Performance Criteria 4: Collect the required tools and equipment</p> <p>Performance Criteria 5: Ensure functional condition of PPE's/Tools and equipment</p> <p>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</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Ensure safe shifting of machine to work bench</p> <p>Performance Criteria 4: Record shifting of machine to work bench</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: Identify the parts to be marked for position marking</p>

	Performance Criteria 4: Perform marking for position of parts as per inventory record
	Assessment Task 4 Performance Criteria 1: Wear the required PPE's Performance Criteria 2: Pick the required tools and equipment Performance Criteria 3: Identify the parts of machine for allotment of specific number Performance Criteria 4: Perform numbering on machine parts as per inventory record
	Assessment Task 5 Performance Criteria 1: Wear the required PPE's Performance Criteria 2: Pick the required tools and equipment Performance Criteria 3: Identify faulty parts of machine Performance Criteria 4: Remove the faulty parts of machine Performance Criteria 5: Mark specific numbering on faulty parts of machine
	Assessment Task 6 Performance Criteria 1: Wear the required PPE's Performance Criteria 2: Pick the required tools and equipment Performance Criteria 3: Mark specific numbering on healthy parts of machine Performance Criteria 4: Place healthy parts of machine at safe place in sequential order Performance Criteria 5: Record the placement/location of healthy parts
	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

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	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓		✓		
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)				
Assessment Task 1 : Prepare for work to disassemble machine at workplace		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 <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: Shift Machine to work bench		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: Ensure safe shifting of machine to work bench			
4	Performance criteria 4: Record shifting of machine to work bench			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3: Perform marking for Positions of Parts		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: Identify the parts to be marked for position marking			
4	Performance criteria 4: Perform marking for position of parts as per inventory record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4: Perform numbering on Machine parts as per Inventory Record		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: Identify the parts of machine for allotment of specific number			
4	Performance criteria 4: Perform numbering on machine parts as per inventory record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 5: Remove the faulty parts		Description of assessment task 5		
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: Identify faulty parts of machine			
4	Performance criteria 4: Remove the faulty parts of Machine			
5	Performance criteria 5: Mark specific numbering on faulty parts of machine			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 6: Ensure safe and Sequential Placing of healthy parts of Machine		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: Mark specific numbering on healthy parts of machine			
4	Performance criteria 4: Place healthy parts of machine at safe place in sequential order			
5	Performance criteria 5: Record the placement/location of healthy parts			
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: 3	Version:
Module Title: Disassemble Machine at Workplace	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: 3	Version:
Module Title: Disassemble Machine at Workplace	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
36. Why marking on machine parts is done?	Marking on machine parts helps in positioning the parts for correct alignment / re-assembling
37. Why numbering on machine parts are done?	In workshop many motors / transformer can be repaired at a time of same capacity. Numbering on machine parts as per inventory record helps us to store the parts properly. It is easy to locate / collect relevant parts when needed for re-assembling.
38. How you locate faulty part of machine?	Faulty parts can be located by physical inspection and on the bases of test results.
39. Why parts are placed in sequential order?	Placing the parts in sequential order helps us re-assemble quickly / properly
40. What do you mean by safe shifting of machine at work bench?	Machines are shifted for repair to work bench keeping in view their weight and size using possible / available source of transportation; it is called safe shifting.
41. Why you maintain record at workshop?	Maintaining record of repair at workshop helps in; <ul style="list-style-type: none">1- Follow up2- Future correspondence3- Calculating workshop income / tax etc.4- Identification same nature of faults in machines and calculation of repair cost

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code: 0713001130	Level: 3	Version:
Module Title: Estimate Repair Replacement Cost	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"> Assessment Task 1: Prepare for work to estimate repair/replacement cost Assessment Task 2: Estimate Cost of the required Materials Assessment Task 3: Estimate Transportation Charges Assessment Task 4: Estimate Labour Cost of the materials Assessment Task 5: Calculate accumulative cost of the materials Assessment Task 6: Liaise with client /customer on repair cost Assessment Task 7: Arrange the required Materials / Parts <p>And complete:</p> <ol style="list-style-type: none"> Knowledge assessment test (Written or Oral) 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 stationary, equipment, software and materials</p> <p>Performance Criteria 2: Collect the required stationary, equipment, software and materials</p> <p>Assessment Task 2</p> <p>Performance Criteria 1: Prepare a list of the materials/parts required for repair/replacement</p> <p>Performance Criteria 2: Estimate quantity of materials/faulty parts of machine</p> <p>Performance Criteria 3: Estimate cost of the required material/parts</p> <p>Assessment Task 3</p> <p>Performance Criteria 1: Estimate transportation cost of pick and drop of machine</p> <p>Performance Criteria 2: Estimate transportation cost on collection/purchase of material/parts of machine</p> <p>Assessment Task 4</p> <p>Performance Criteria 1: Estimate man hours for pick and drop of machine</p> <p>Performance Criteria 2: Estimate man hours for arrangement of material/parts</p> <p>Performance Criteria 3: Estimate man hours required for repair work</p>

	<p>Assessment Task 5</p> <p>Performance Criteria 1: Calculate the estimated costs:</p> <ul style="list-style-type: none"> • Material Cost • Transportation Cost • Labour Cost • Overhead Charges • Set the profit margin <p>Performance Criteria 2: Calculate the accumulative cost</p>
	<p>Assessment Task 6</p> <p>Performance Criteria 1: Inform the client/customer about total cost</p> <p>Performance Criteria 2: Negotiate with the client/customer about total cost</p> <p>Performance Criteria 3: Finalize the total cost</p> <p>Performance Criteria 4: Make an agreement with the client/customer</p>
	<p>Assessment Task 7</p> <p>Performance Criteria 1: Collect a list of the estimated material/parts for repair</p> <p>Performance Criteria 2: Check availability of the required parts/material in the store</p> <p>Performance Criteria 3: Place purchase order for the deficient parts/materials</p> <p>Performance Criteria 4: Collect the required parts/materials from the store</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>

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	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓		✓		
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)					
Assessment Task 1: Prepare for work to estimate repair/replacement cost		Description of assessment task 1			
During the practical assessment, candidate demonstrated the following:			Yes	No	Remarks
1	Performance criteria 1: Identify the required stationary, equipment, software and materials				
2	Performance criteria 2: Collect the required stationary, equipment, software and materials				
Competent <input type="checkbox"/>			Not Yet Competent <input type="checkbox"/>		

Assessment Task 2: Estimate Cost of the required Materials		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Prepare list of the materials/parts required for repair/replacement			
2	Performance criteria 2: Estimate quantity of materials/faulty parts of machine			
3	Performance criteria 3: Estimate cost of the required material/parts			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3: Estimate Transportation Charges		Description of assessment task 3		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Estimate transportation cost of pick and drop of machine			
2	Performance criteria 2: Estimate transportation cost on collection/purchase of material/parts of machine			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4: Estimate Labour Cost of the materials		Description of assessment task 4		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Estimate man hours for pick and drop of machine			
2	Performance criteria 2: Estimate man hours for arrangement of material/parts			
3	Performance criteria 3: Estimate man hours required for repair work			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 5: Calculate accumulative cost of the materials		Description of assessment task 5		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Collect the estimated costs: <ul style="list-style-type: none"> • Material Cost • Transportation Cost • Labour Cost • Overhead Charges • Set the profit margin 			
2	Performance criteria 2: Calculate the accumulative cost			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 6: Liaise with client /customer on repair cost		Description of assessment task 6		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Inform the client/customer about total cost			
2	Performance criteria 2: Negotiate with the client/customer about total cost			
3	Performance criteria 3: Finalize the total cost			
4	Performance criteria 4: Make an agreement with the client/customer			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 7: Arrange the required Materials / Parts		Description of assessment task 7		
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"/>		

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: 3	Version:
Module Title: Estimate Repair Replacement Cost	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: 3	Version:
Module Title: Estimate Repair Replacement Cost	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer																				
42. How you prepare estimate of repair material?	<div>I will prepare list of required material, estimate quantity of required material, and then estimate cost of required material</div> <table><tr><th>Sr.#</th><th>Item detail</th><th>Qty.</th><th>Rate</th><th>Amount</th><th>Sales Tax</th><th>Income Tax</th><th>Total cost</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	Sr.#	Item detail	Qty.	Rate	Amount	Sales Tax	Income Tax	Total cost												
Sr.#	Item detail	Qty.	Rate	Amount	Sales Tax	Income Tax	Total cost														
43. How you prepare estimate transportation charges?	<div>I will prepare estimate of transportation charges for shifting machine from site to workshop and back, transportation charges for purchasing machine parts from market to workshop.</div> <table><tr><th>Sr.#</th><th>Detail of Transportation charges</th><th>Amount</th><th>Tax</th><th>Total Amount</th></tr><tr><td>1</td><td>Shifting of machine from site to workshop & back</td><td></td><td></td><td></td></tr><tr><td>2</td><td>Shifting material / parts after Purchasing from market</td><td></td><td></td><td></td></tr></table>	Sr.#	Detail of Transportation charges	Amount	Tax	Total Amount	1	Shifting of machine from site to workshop & back				2	Shifting material / parts after Purchasing from market								
Sr.#	Detail of Transportation charges	Amount	Tax	Total Amount																	
1	Shifting of machine from site to workshop & back																				
2	Shifting material / parts after Purchasing from market																				
44. How you prepare estimate of labour cost?	<div>I will prepare estimate of labour hours required for transportation of machine, purchase of materials & in performing repair, then calculate labour cost.</div> <table><tr><th>Sr. #</th><th>Nature of labour Hours</th><th>Hours</th><th>Rate</th><th>Total Amount</th></tr><tr><td>1</td><td>Man hours for shifting of machine from site to workshop & back</td><td></td><td></td><td></td></tr><tr><td>2</td><td>Man hours for collecting purchasing parts from market</td><td></td><td></td><td></td></tr><tr><td>3</td><td>Man hours for performing repair work</td><td></td><td></td><td></td></tr></table>	Sr. #	Nature of labour Hours	Hours	Rate	Total Amount	1	Man hours for shifting of machine from site to workshop & back				2	Man hours for collecting purchasing parts from market				3	Man hours for performing repair work			
Sr. #	Nature of labour Hours	Hours	Rate	Total Amount																	
1	Man hours for shifting of machine from site to workshop & back																				
2	Man hours for collecting purchasing parts from market																				
3	Man hours for performing repair work																				
45. How you calculate accumulative repair cost?	<div>I will calculate accumulative repair cost by adding, estimated cost of required material, estimated transportation charges, estimated labour cost, profit margin, tax andoverhead utility charges of workshop.</div>																				
46. Why it is important to liaise with the client / customer on repair cost?	<div>it is important to liaise with the client / customer on repair cost to avoid any possible litigation</div>																				

This formative assessment relates to the training programme: Electrical Machine Winding Technician		CS Code: 0713001131	Level: 3	Version:
Module Title: Diagnose Fault 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> <ul style="list-style-type: none"> • Assessment Task 1: Prepare for work to diagnose fault of machine (Motor) • Assessment Task 2: Verify onsite inspection/test results of machine • Assessment Task 3: Check Alignment of Rotor Shaft • Assessment Task 4: Check Bearing/ Bush of Machine • Assessment Task 5: Update Test Results of Machine • Assessment Task 6: Identify the Faulty Parts of Machine <p>And complete:</p> <ul style="list-style-type: none"> • Knowledge assessment test (Written or Oral) • 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</p> <p>Performance Criteria 2: Collect the required PPE's</p> <p>Performance Criteria 3: Identify the required tools and equipment</p> <p>Performance Criteria 4: Collect the required tools and equipment</p> <p>Performance Criteria 5: Ensure functional condition of PPE's/Tools and equipment</p> <p>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</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Verify / Check numbering on machine parts as per inventory record</p> <p>Performance Criteria 4: Perform testing with Megger</p> <ul style="list-style-type: none"> ○ Ground/Earth Fault ○ Short Circuit ○ Open Circuit <p>Performance Criteria 5: Record test result</p> <p>Performance Criteria 6: Compare both the pre and current test results</p>			

	Assessment Task 3 Performance Criteria 1: Wear the required PPE's Performance Criteria 2: Pick the required tools and equipment Performance Criteria 3: Check alignment of rotor shaft with the help of dial gauge Performance Criteria 4: Check the rotor shaft size as per bearing size Performance Criteria 5: Check run out of the rotor shaft Performance Criteria 6: Record result
	Assessment Task 4 Performance Criteria 1: Wear the required PPE's Performance Criteria 2: Pick the required tools and equipment Performance Criteria 3: Inspect the bearing/bush for <ul style="list-style-type: none"> • noise • Axial/Radial Play/Looseness • Stickiness • Lubrication • Breakage Performance Criteria 4: Check bearing / bush of machine Performance Criteria 5: Record result
	Assessment Task 5 Performance Criteria 1: Collect pre inspection test results of machine Performance Criteria 2: Collect test results of machine conducted in workshop Performance Criteria 3: Update test results of machine
	Assessment Task 6 Performance Criteria 1: Check test results of machine Performance Criteria 2: Identify faulty parts of machine Performance Criteria 3: Perform Numbering on faulty parts of machine according to inventory record Performance Criteria 4: Tag faulty parts of machine
	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

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		NOT YET COMPETENT				
	Name of the Assessor:		Assessor's code:				
	Signature of the Assessor:						
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							

Each Assessment Task (with performance criteria)				
Assessment Task 1: Prepare for work to diagnose fault 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 <ul style="list-style-type: none"> • Clear Passage • Cleanliness • Adequate light • Ventilation 			
Competent		Not Yet Competent		

Assessment Task 2: Verify onsite inspection/test results of machine		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			s
2	Performance criteria 2: Pick the required tools and equipment			
3	Performance criteria 3: Verify / Check numbering on machine parts as per inventory record			
4	Performance criteria 4: Perform testing with Megger <ul style="list-style-type: none"> • Ground/Earth Fault • Short Circuit • Open Circuit 			
5	Performance criteria 5: Record test result			
6	Performance criteria 6: Compare both the pre and current test results			
Competent		Not Yet Competent		

Assessment Task 3: Check Alignment of Rotor Shaft		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: Check alignment of rotor shaft with the help of dial gauge			
4	Performance criteria 4: Check the rotor shaft size as per bearing size			
5	Performance criteria 5: Check run out of the rotor shaft			
6	Performance criteria 6: Record result			
Competent		Not Yet Competent		

Assessment Task 4: Check Bearing/ Bush of Machine		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: Inspect the bearing/bush for <ul style="list-style-type: none"> • noise • Axial/Radial Play/Looseness • Stickiness • Lubrication • Breakage 			
4	Performance criteria 4: Check bearing / bush of machine			
5	Performance criteria 5: : Record result			
Competent		Not Yet Competent		

Assessment Task 5: Update Test Results of Machine		Description of assessment task 5		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Collect pre inspection test results of machine			
2	Performance criteria 2: Collect test results of machine conducted in workshop			
3	Performance criteria 3: Update test results of machine			
Competent		Not Yet Competent		

Assessment Task 6: Identify the Faulty Parts of Machine		Description of assessment task 6		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Check test results of machine			
2	Performance criteria 2: Identify faulty parts of machine			
3	Performance criteria 3: Perform Numbering on faulty parts of machine according to inventory record			
4	Performance criteria 4: Tag faulty parts of machine			
Competent		Not Yet Competent		

Portfolio (if any)		Description of portfolio				
Current		Sufficient	Authentic	Valid	Reliable	
Portfolio meet the following performance standards:				Yes	No	Remarks
1	Performance criteria 1					
2	Performance criteria 2					
3	Performance criteria 3					
4	.....				
Competent				Not Yet Competent		

Knowledge Assessment

TITLE OF QUALIFICATION

(Formative Assessment)

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 3	Version:
Module Title: Diagnose Fault 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:

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code:	Level: 3	Version:
Module Title: Diagnose Fault of Machine (Motor)	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
47. How you verify onsite inspection test results?	We perform test at workshop and compare their results with onsite inspection test results.
48. How you check alignment of rotor shaft?	Rotor shaft alignment is checked with dial gauge
49. Why you check the rotor shaft for bearing size?	Bearing must be fitted properly on rotor shaft, loose or too much tight fitting of bearing on rotor shaft produce excessive heat which burnt winding of motor; that why we check rotor shaft for bearing size.
50. How you check bearing?	Checking of bearing is performed by observing it's; <ul style="list-style-type: none"> ➤ Noise ➤ Axial / Radial play / looseness ➤ Stickiness ➤ Lubrication ➤ Breakage
51. How you check bushing?	Checking of bushing is performed by observing it's; <ul style="list-style-type: none"> ➤ Noise ➤ Axial / Radial play / looseness ➤ Stickiness ➤ Lubrication ➤ Breakage
52. How you identify faulty parts of machine?	Faulty parts of machines are identified by physical checking and on the bases of test results.

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code: 0713001132	Level: 3	Version:
Module Title: Perform Motor Rewinding	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"> Assessment Task 1: Prepare for work to perform motor rewinding Assessment Task 2: Shift Faulty part of Motor to work Bench Assessment Task 3: Remove the Winding Coils Assessment Task 4: Collect the required Materials for Rewinding Assessment Task 5: Prepare Core for Rewinding Assessment Task 6: Interpret Winding Diagram Assessment Task 7: Make a Former for Coil Winding Assessment Task 8: Prepare Coil Winding Machine for Rewinding Assessment Task 9: Set the Coils in the Core slots Assessment Task 10: Interlink Coils as per number of Poles Assessment Task 11: Perform Winding Tests Assessment Task 12: Perform Binding of Coils Assessment Task 13: Conduct Baking of Winding Assessment Task 14: Verify Winding Tests <p>And complete:</p> <ol style="list-style-type: none"> Knowledge assessment test (Written or Oral) 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</p> <p>Performance Criteria 2: Collect the required PPE's</p> <p>Performance Criteria 3: Identify the required tools and equipment</p> <p>Performance Criteria 4: Collect the required tools and equipment</p> <p>Performance Criteria 5: Ensure functional condition of PPE's/Tools and equipment</p> <p>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</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Locate faulty parts of motor</p> <p>Performance Criteria 4: Perform shifting of faulty parts of motor to work bench</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: Perform marking at motor body for correct re-fitting at both ends</p> <p>Performance Criteria 4: Dis-assemble motor</p> <p>Performance Criteria 5: Store rotor and stator after appropriate tagging</p> <p>Performance Criteria 6: Cut fastening threads</p> <p>Performance Criteria 7: Record the connection details of stator coils</p> <p>Performance Criteria 8: Locate faulty winding coils</p> <p>Performance Criteria 9: Cut faulty winding coils from both ends of stator core</p> <p>Performance Criteria 10: Remove faulty coils from stator core</p> <p>Performance Criteria 11: Count / measure and record:</p> <ul style="list-style-type: none"> ➤ Number of turns of each coil ➤ Pole pitch ➤ Coil span ➤ Weight of each coil <p>Size of winding wire of each coil</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: Estimate total weight of wire required for rewinding</p> <p>Performance Criteria 4: Verify size of winding wire</p> <p>Performance Criteria 5: Estimate length of required latheroid paper</p> <p>Performance Criteria 6: Prepare list of material required for rewinding</p> <p>Performance Criteria 7: Collect the required material for rewinding</p> <p>Performance Criteria 8: 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: Clean laminations of the core</p> <p>Performance Criteria 4: Set laminations of the core</p> <p>Performance Criteria 5: Perform marking on latheroid paper according to size of core slots</p> <p>Performance Criteria 6: Perform cutting of latheroid paper according to marking</p> <p>Performance Criteria 7: Insert latheroid paper into core slots</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: Collect winding data</p> <p>Performance Criteria 4: Interpret winding diagram</p>

	<p>Assessment Task 7</p> <p>Performance Criteria1: Wear the required PPE's</p> <p>Performance Criteria 2: Pick the required tools and equipment</p> <p>Performance Criteria 3: Collect winding data</p> <p>Performance Criteria 4: Collect the former of appropriate size</p> <p>Performance Criteria 5: Make / adjust former according to coil span</p> <p>Performance Criteria 6: Verify adjustment of former according to coil span</p> <p>Performance Criteria 7: Fix and adjust former according to coil span</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: Collect the already adjusted former</p> <p>Performance Criteria 4: Collect relevant size winding wire</p> <p>Performance Criteria 5: Prepare required number of coil sets</p> <p>Performance Criteria 6: Calculate the total weight of winding coils</p> <p>Performance Criteria 7: 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: Collect core and the sets of coils to be inserted in core</p> <p>Performance Criteria 4: Insert coils one by one in the core slots according to winding diagram</p> <p>Performance Criteria 5: Set the coils in core slots</p> <p>Performance Criteria 6: Verify the sequence of coil insertion</p> <p>Performance Criteria 7: Insert latheroid paper or bamboo wedgeto prevent coils from slipping out from the core slots</p>
	<p>Assessment Task 10</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 Core having coils inserted in it</p> <p>Performance Criteria 4: Insert appropriate size sleeves on one side of coils ends</p> <p>Performance Criteria 5: Remove varnish insulation from ends of coils</p> <p>Performance Criteria 6: Interlink coils end as per number of poles and winding diagram</p> <p>Performance Criteria 7: Connect supply leads according winding diagram with coils</p> <p>Performance Criteria 8: Check that the coils have sound:</p> <ul style="list-style-type: none"> ➤ Continuity ➤ Insulation between overlapping coils ➤ Insulation between coils and core <p>Performance Criteria 9: Verify the connections</p> <p>Performance Criteria 10: Solder the joints</p> <p>Performance Criteria 11: Slide sleeves over the joints to insulate the joint</p> <p>Performance Criteria 12: Press the winding coils to ward outer edge of core</p>
	<p>Assessment Task 11</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 newly wound core</p> <p>Performance Criteria 4: Perform winding test to verify</p> <ul style="list-style-type: none"> ➤ Continuity ➤ Insulation between overlapping coils ➤ Insulation between coil and core ➤ Megger Test

	<p>Assessment Task 12</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: Put latheroid paper between two coils to strengthen insulation on both sides of core ends</p> <p>Performance Criteria 4: Perform binding of coil with binding thread or cotton tape on both sides of core ends</p> <p>Performance Criteria 5: Press the coil ends toward outer side of core</p> <p>Performance Criteria 6: Verify that the coils have sound:</p> <ul style="list-style-type: none"> ➤ Continuity ➤ Insulation between each other ➤ Insulation between coil and core
	<p>Assessment Task 13</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: Varnish the winding</p> <p>Performance Criteria 4: Verify that the coils have sound:</p> <ul style="list-style-type: none"> ➤ Continuity ➤ Insulation between each other ➤ Insulation between coil and core <p>Performance Criteria 5: Perform baking of winding</p>
	<p>Assessment Task 14</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 winding tests to verify that the coils have:</p> <ul style="list-style-type: none"> ➤ Continuity ➤ Insulation between each other ➤ Insulation between coil and core
	<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	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓		✓		
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)			
Assessment Task 1 :Prepare for work to perform motor rewinding		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 Criteria3: 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"/>
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Assessment Task 2: Shift Faulty part of Motor to work Bench		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: Locate faulty parts of motor			
4	Performance Criteria 4: Perform shifting of faulty parts of motor to work bench			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3: Remove the Winding Coils		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: Perform marking at motor body for correct re-fitting at both ends			
4	Performance Criteria 4: Dis-assemble motor			
5	Performance Criteria 5: Store rotor and stator after appropriate tagging			
6	Performance Criteria 6: Cut fastening threads			
7	Performance Criteria 7: Record the connection details of stator coils			
8	Performance Criteria 8: Locate faulty winding coils			
9	Performance Criteria 9: Cut faulty winding coils from both ends of stator core			
10	Performance Criteria 10: Remove faulty coils from stator core			
11	Performance Criteria 11: Count / measure and record: <ul style="list-style-type: none"> ➤ Number of turns of each coil ➤ Pole pitch ➤ Coil span ➤ Weight of each coil ➤ Size of winding wire of each coil 			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4: Collect the required Materials for Rewinding		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: Estimate total weight of wire required for rewinding			
4	Performance criteria 4: Verify size of winding wire			
5	Performance criteria 5: Estimate length of required latheroid paper			
	Performance criteria 6: Prepare list of material required for rewinding			
	Performance criteria 7: Collect the required material for rewinding			
	Performance criteria 8: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 5: Prepare Core for Rewinding		Description of assessment task 5		
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: Clean laminations of the core			
4	Performance criteria 4: Set laminations of the core			
5	Performance criteria 5: Perform marking on latheroid paper according to size of core slots			
6	Performance criteria 6: Perform cutting of latheroid paper according to marking			
7	Performance criteria 7: Insert latheroid paper into core slots			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 6: Interpret Winding Diagram		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: Collect winding data			
4	Performance criteria 4: Interpret winding diagram			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task7: Make a Former for Coil Winding		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: Collect winding data			
4	Performance criteria 4: Collect the former of appropriate size			
5	Performance criteria 5: Make / adjust former according to coil span			
6	Performance criteria 6: Verify adjustment of former according to coil span			
7	Performance criteria 7: Fix and adjust former according to coil span			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task8: Prepare Coil Winding Machine for Rewinding		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: Collect the already adjusted former			
4	Performance criteria 4: Collect relevant size winding wire			
5	Performance criteria 5: Prepare required number of coil sets			
6	Performance criteria 6: Calculate the total weight of winding coils			
7	Performance criteria 7: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task9: Set the Coils in the Core slots		Description of assessment task 9		
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 core and the sets of coils to be inserted in core			
4	Performance criteria4: Insert coils one by one in the core slots according to winding diagram			
5	Performance criteria5: Set the coils in core slots			
6	Performance criteria6: Verify the sequence of coil insertion			
7	Performance criteria7: Insert latheroid paper or bamboo wedge to prevent coils from slipping out from the core slots			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task10: Interlink Coils as per number of Poles		Description of assessment task 10		
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 Core having coils inserted in it			
4	Performance criteria4:Insert appropriate size sleeves on one side of coils ends			
5	Performance criteria5:Remove varnish insulation from ends of coils			
6	Performance criteria6: Interlink coils end as per number of poles and winding diagram			
7	Performance criteria7: Connect supply leads according winding diagram with coils			
8	Performance criteria8:Check that the coils have sound: <ul style="list-style-type: none"> ➤ Continuity ➤ Insulation between overlapping coils ➤ Insulation between coils and core 			
9	Performance criteria 9:Verify the connections			
10	Performance criteria 10: Solder the joints			
11	Performance criteria 11: Slide sleeves over the joints to insulate the joint			
12	Performance criteria 12:Press the winding coils to ward outer edge of core			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 11: Perform Winding Tests		Description of assessment task 11		
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 newly wound core			
4	Performance criteria4: Perform winding test to verify <ul style="list-style-type: none"> ➤ Continuity ➤ Insulation between overlapping coils ➤ Insulation between coil and core ➤ Megger Test 			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 12: Perform Binding of Coils		Description of assessment task 12		
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: Put latheroid paper between two coilsto strengthen insulation on both sides of core ends			
4	Performance criteria4: Perform binding of coil with binding thread or cotton tape on both sides of core ends			
5	Performance criteria5: Press the coil ends toward outer side of core			
6	Performance criteria6: Verify that the coils have sound: <ul style="list-style-type: none"> ➤ Continuity ➤ Insulation between each other ➤ Insulation between coil and core 			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 13: Conduct Baking of Winding		Description of assessment task 13		
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: Varnish the winding			
4	Performance criteria 4: Verify that the coils have sound: <ul style="list-style-type: none"> ➤ Continuity ➤ Insulation between each other ➤ Insulation between coil and core 			
5	Performance criteria 5: Perform baking of winding			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 14: Perform Binding of Coils		Description of assessment task 14		
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 winding tests to verify that the coils have: <ul style="list-style-type: none"> ➤ Continuity ➤ Insulation between each other ➤ Insulation between coil and core 			
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:3	Version:
Module Title: Perform Motor Rewinding	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:3	Version:
Module Title: Perform Motor Rewinding	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
53. What is motor winding?	It is a conductive wire, which is oriented in a loop pattern that carries electrical current. Motor winding is the part of the motor that is responsible for generating the magnetic field to make the rotor spin.
54. What are the types of DC Motor winding?	<p>There are two types of DC motor windings (a) Lap winding (b) Wave winding. These two types of windings differ in two ways:</p> <ul style="list-style-type: none"> (i) Number of circuits between positive and negative brushes (ii) The manner in which the coil ends are connected <p>There are three different types of Lap Winding:</p> <p>Simplex Lap Winding – The distance between the segments of commutator to which the coil ends are connected (commutator pitch) is 1.</p> <p>Duplex lap Winding – The commutator pitch is 2.</p> <p>Triplex Lap Winding – The commutator pitch for triplex winding is 3.</p>
55. What are the types of AC induction Motor winding?	<p>The different AC induction motor winding types are:</p> <p>Concentric Single Layer Winding</p> <p>Concentric Double Layer Winding</p> <p>Fractional Concentric Winding</p>
56. Why are motor cores laminated?	<p>The induced EMF in core due to induction causes current to flow, known as eddy current. Eddy currents are the result of the armature core rotating in a magnetic field. (Hysteresis loss is another component of magnetic loss.) These losses produce heat and reduce motor efficiency.</p> <p>Assembling stator core with thin laminated silicon content steel reduces magnetic / iron losses.</p> <p>(a) Adding silicon with steel reduces Hysteresis loss and</p> <p>(b) Assembling with laminated steel reduces Eddy Current loss.</p> <p>Rotor core is not subjected to Iron losses since frequency of rotor current is very low.</p>
57. What is coil winding machine?	Electrical coil winding machines include motor coil, transformer coil, inductor coil, and choke coil winding machines. Motor coil winding machines are used to wind both single-phase and three-phase motor coil. They are designed for use with concentric or equal-size motor winding arbors.
58. Where winding coils are laced in core?	Winding coils are laced in core slots.

Question	Candidate's answer																													
59. What is meant by pole?	Poles are the number of sets of three-way electromagnetic windings that a motor has. In the simplest three-phase motor, there are 3 separate electromagnets formed by the single set of three-way windings. Thus, there is a set of North-South electromagnetic poles formed.																													
60. What is pole pitch?	The pole pitch is defined as peripheral distance between centers of two adjacent poles in dc machine. This distance is measured in term of armature slots or armature conductor come between two adjacent pole centers. This is naturally equal to the total number of armature slots divided by number of poles in the machine.																													
61. How do you find the pole on a motor?	The actual running speed is the synchronous speed minus the slip speed. To determine the number of poles, you can read the data plate directly or calculate it from the RPM stated on the data plate or you can count the coils and divide by 3 (poles per phase) or by 6 (pairs of poles per phase)																													
62. What is full pitch winding?	The winding of an armature in which the two sides of the armature coil span a distance equal to the pole pitch. Is called full pitch winding.																													
63. How two poles are created in an induction motor?	The stator is built up a silicon steel punched laminations, and assembled as a hollow cylinder inside the motor frame. A distributed three-phase winding is arranged in slots on the inner circumference. Each of the three stator windings has two halves, on opposite sides of the stator. The windings are disposed 120 degrees apart from each other. If electric current is passed through two coils on opposite sides of the stator, we have an electromagnet. This sets up a magnetic field like that of a horseshoe magnet. This field passes through the rotor. Thus each winding has two magnetic poles, thus the motor is known as a two pole motor.																													
64. Is actual motor speed differs from synchronous speed?	<p>Speed of an operating electrical motor with load is lower than the synchronous speed (no load) of the motor</p> <table><tr><th rowspan="2">No. Poles</th><th colspan="2">Speed with Rated Load</th><th colspan="2">Synchronous Speed (no Load)</th></tr><tr><th>60 Hz</th><th>50 Hz</th><th>60 Hz</th><th>50 Hz</th></tr><tr><td>2</td><td>3450</td><td>2850</td><td>3600</td><td>3000</td></tr><tr><td>4</td><td>1725</td><td>1425</td><td>1800</td><td>1500</td></tr><tr><td>6</td><td>1140</td><td>950</td><td>1200</td><td>1000</td></tr><tr><td>8</td><td>850</td><td>700</td><td>900</td><td>750</td></tr></table>	No. Poles	Speed with Rated Load		Synchronous Speed (no Load)		60 Hz	50 Hz	60 Hz	50 Hz	2	3450	2850	3600	3000	4	1725	1425	1800	1500	6	1140	950	1200	1000	8	850	700	900	750
No. Poles	Speed with Rated Load		Synchronous Speed (no Load)																											
	60 Hz	50 Hz	60 Hz	50 Hz																										
2	3450	2850	3600	3000																										
4	1725	1425	1800	1500																										
6	1140	950	1200	1000																										
8	850	700	900	750																										

Question	Candidate's answer
65. How clamp on meter is used to measure motor current?	Clamp-on meters are user friendly. We have to adjust its knob on Current position according to current range, open the spring-loaded jaws, insert either the hot or neutral conductor, and then release the jaws; the ammeter will provide the reading of current flowing. The wire need not be centered in the opening and it's OK if it passes through at an angle. However, an entire cable containing hot and neutral conductors cannot be measured this way. That's because the current flowing through the two wires travels in opposite directions so the two magnetic fields cancel out. Consequently, it's not possible to measure the current in a power cord, as is often desired. The use of a splitter fixes the problem. This is a short extension cord of adequate rating with about six inches of jacket removed so that one of the conductors can be separated and measured.
66. What types of test are performed after winding a motor?	The following tests are performed after re-winding of motor; 1- Continuity test 2- Insulation test between different coils and between coils and motor body
67. What are the main causes of winding defects?	Winding defects occurs due to contamination, ageing of insulation, thermal overload, power surges, damaged wire/materials, and other causes. They start as energy crossing an insulation fault like moisture, which sets apart at least one turn. This creates extra stress and increase in temperature across the fault, which increases until the winding fails.
68. What are the main faults of winding?	Some of the winding faults are insulation failure between: <ul style="list-style-type: none"> • Turns in a coil • Coils in a phase • Coils in different phases • A coil or phase and ground
69. How you check the faulty motor?	I will check the appearance of the motor. Verify for body deterioration or damage to the cooling fan blade or shaft. Manually rotate the shaft to check the bearing condition. Check for free & smooth rotation. Note the motor data from the motor NAME PLATE. Check Earth Continuity, Using ohmmeter to verify the resistance between earth and motor frame is less than 0.5 Ω . Check Power supply voltage, 415 v between L1 to L2, L3 to L1 and L2 to L3
70. What are the benefits of motor testing?	Benefits of Motor Testing are; <ul style="list-style-type: none"> • Increase up-time • Save money • Conserve energy • Improve safety
71. How you varnish and bake are-winded motor?	I will perform varnishing and baking in following manner; <ol style="list-style-type: none"> 1. Heat up baking oven to 100 °C. Put motor in it. 2. When motor heats up, spills varnish / lacquer on motors coils 3. Turn motor around and do the same 4. Put motor in hot oven, and cook it for about 4 hours 5. Take motor out and clean edge (so cover will fit perfectly)

Question	Candidate's answer
72. How you strengthen insulation between two overlapped coils?	To strengthen insulation I will put a piece of latheroid paper between two overlapped coils, then bind them with thread or cotton tape.

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code: 0713001133	Level: 3	Version:
Module Title: Perform Transformer Rewinding	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> 15. Assessment Task 1: Prepare for work to perform transformer rewinding 16. Assessment Task 2: Collect Faulty Coil of Transformer 17. Assessment Task 3: Compile data of Faulty Transformer Coil / Coils 18. Assessment Task 4: Collect the required Materials for Re-winding 19. Assessment Task 5: Prepare Former for Coil Winding 20. Assessment Task 6: Prepare Coil on Winding Machine 21. Assessment Task 7: Re- Assemble the Coil on Core 22. Assessment Task 8: Make Connections as per rating plate of Transformer 23. Assessment Task 9: Calculate Turn Ratio of Transformer 24. Assessment Task 10: Conduct Baking of live part/Coil Assembly of Transformer </p> <p>And complete:</p> <p> 13. Knowledge assessment test (Written or Oral) 14. 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> <p> ➤ Clear Passage ➤ Cleanliness ➤ Adequate light ➤ Ventilation </p>

	<p>Assessment Task 2</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 cover of transformer</p> <p>Performance Criteria 4: Identify faulty coil</p> <p>Performance Criteria 5: Disconnect connections of faulty coil</p> <p>Performance Criteria 6: Disassemble the channel of core</p> <p>Performance Criteria 7: Remove the required part of core</p> <p>Performance Criteria 8: Remove the faulty coil / coils from the limb of core</p> <p>Performance Criteria 9: Ensure proper placing of removed coils</p> <p>Performance Criteria 10: 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: Collect the faulty coil</p> <p>Performance Criteria 4: Measure / calculate:</p> <ul style="list-style-type: none"> ➤ Dimensions (Height, inner & outer diameter) of coil / coils ➤ Size of winding wire ➤ No of turns of coil <p>Performance Criteria 5: Collect data from name plate of transformer</p> <p>Performance Criteria 6: Compile data of faulty coil / coils of transformer</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: Prepare estimate of the required material for rewinding</p> <p>Performance Criteria 4: Collect material required for rewinding</p> <p>Performance Criteria 5: 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: Collect winding data</p> <p>Performance Criteria 4: Collect/Prepare former as per required dimensions (Volume)</p> <p>Performance Criteria 5: Verify the size of former according to the coil</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: Collect former</p> <p>Performance Criteria 4: Fix former on winding machine</p> <p>Performance Criteria 5: Collect required winding material</p> <p>Performance Criteria 6: Wrap two, three layers of latheroid paper on the former</p> <p>Performance Criteria 7: Fasten one end of winding wire with former</p> <p>Performance Criteria 8: Put small pieces of cotton tape on former for coil binding</p> <p>Performance Criteria 9: Wind quarter length of coil</p> <p>Performance Criteria 10: Pull the cotton tape to bind the wound turns</p> <p>Performance Criteria 11: Complete winding of first layer of coil</p> <p>Performance Criteria 12: Wrap latheroid paper over first layer of coil</p> <p>Performance Criteria 13: Complete winding of all coil layers according to number of turns</p> <p>Performance Criteria 14: Bind the coil with cotton tape</p> <p>Performance Criteria 15: Apply varnish on last / end layer of coil</p> <p>Performance Criteria 16: Communicate client/customer regarding readiness of machine</p> <p>Performance Criteria 17: Communicate client/customer regarding readiness of machine</p> <p>Performance Criteria 18: Communicate client/customer regarding readiness of machine</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:: Insert the wound coil over the limb of core</p> <p>Performance Criteria 4:: Assemble the opened layer of the core</p> <p>Performance Criteria 5:: Fit the channel on core</p> <p>Performance Criteria 6:: Fix the channel on core</p> <p>Performance Criteria 7:: 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: Make connection as per data / rating plate of transformer</p> <p>Performance Criteria 4: Perform joint soldering of coils connections</p> <p>Performance Criteria 5: 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: Collect specifications from data / rating plate of transformer</p> <p>Performance Criteria 4: Calculate turn ratio of transformer</p> <p>Performance Criteria 5: Update record</p> <p>Assessment Task 10</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: Place the transformer's coil assembly / live part in baking oven</p> <p>Performance Criteria 4: Set specific temperature of the baking oven</p> <p>Performance Criteria 5: Perform baking of coil assembly / live part</p> <p>Performance Criteria 6: Update record</p>
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	<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>
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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	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓		✓		
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)			
Assessment Task 1 :Prepare for work to perform transformer rewinding		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"/>
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Assessment Task 2: Collect Faulty Coil of Transformer		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 Criteria3:Remove cover of transformer			
4	Performance Criteria 4: Identify faulty coil			
5	Performance Criteria 5:Disconnect connections of faulty coil			
6	Performance Criteria 6:Disassemble the channel of core			
7	Performance Criteria 7:Remove the required part of core			
8	Performance Criteria 8: Remove the faulty coil / coils from the limb of core			
9	Performance Criteria 9:Ensure proper placing of removed coils			
10	Performance Criteria 10: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3: Compile data of Faulty Transformer Coil / Coils		Description of assessment task 3		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance Criteria 01:Wear the required PPE's			
2	Performance Criteria 01:Pick the required tools and equipment			
3	Performance Criteria 01:Collect the faulty coil			
4	Performance Criteria 01:Measure / calculate: <ul style="list-style-type: none"> ➤ Dimensions (Height, inner & outer diameter) of coil / coils ➤ Size of winding wire ➤ No of turns of coil 			
5	Performance Criteria 01:Collect data from name plate of transformer			
6	Performance Criteria 01:Compile dataof faulty coil / coils of transformer			
7	Performance Criteria 01:Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4: Collect the required Materials for Re-winding		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:Prepare estimate of the required material for rewinding			
4	Performance criteria 4:Collect material required for rewinding			
5	Performance criteria 5:Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 5: Prepare Former for Coil Winding		Description of assessment task 5		
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: Collect winding data			
4	Performance criteria 4:: Collect/Prepare former as per required dimensions(Volume)			
5	Performance criteria 5:: Verify the size of former according to the coil			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 6: Prepare Coil on Winding Machine		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::Collect former			
4	Performance criteria 4:Fix former on winding machine			
5	Performance criteria 5::Collect required winding material			
6	Performance criteria 6::Wrap two, three layers of latheroid paper on the former			
7	Performance criteria 7:Fasten one end of winding wire with former			
8	Performance criteria 8:: Put small pieces of cotton tape on former for coil binding			
9	Performance criteria 9: Wind quarter length of coil			
10	Performance criteria 10:: Pull the cotton tape to bind the wound turns			
11	Performance criteria 11::Complete winding of first layerof coil			
12	Performance criteria 12:Wrap latheroid paper over first layer of coil			
13	Performance criteria 13:Complete winding of all coil layers according to number of turns			
14	Performance criteria 14:Bind the coil with cotton tape			
15	Performance criteria 15:: Apply varnish on last / end layer of coil			
16	Performance criteria 16::Remove the former from winding machine			
17	Performance criteria 17: Remove the formerfrom the coil			
18	Performance criteria 18:Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task7: Re- Assemble the Coil on Core		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: Insert the wound coil over the limb of core			
4	Performance criteria 4: Assemble the openedlayer of the core			
5	Performance criteria 5: Fit the channel on core			
6	Performance criteria 6: Fix the channel on core			
7	Performance criteria 7: Update record			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task8: Make Connections as per rating plate of Transformer		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: Make connection as per data / rating plate of transformer			
4	Performance criteria 4: Perform jointssoldering of coils connections			
5	Performance criteria 5: Update record			
6				
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task9: Calculate Turn Ratio of Transformer		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: Collect specifications from data / ratingplate of transformer			
4	Performance criteria 4: Calculate turn ratio of transformer			
5	Performance criteria 5: Update record			
6				
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task10: Conduct Baking of live part/Coil Assembly of Transformer		Description of assessment task 10		
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:Place the transformer's coil assembly / live part in baking oven			
4	Performance criteria 4: Set specific temperature of the baking oven			
5	Performance criteria 5:Perform baking of coil assembly / live part			
6	Performance criteria 6: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: 3	Version:
Module Title: Perform Transfer Rewinding	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: 3	Version:
Module Title: Perform Transfer Rewinding	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
73. Why core of transformer is laminated?	The core of transformer is laminated to minimize eddy current loss.
74. What material is used to prepare transformer core?	Transformer core is made with silicon steel
75. What is meant by HT and LT?	HT means high tension (High voltage) and LT mean low tension (Low voltage)
76. What is the working principle of Transformer?	Working principle of Transformer is mutual induction
77. Can transformer work on DC supply?	No transformer cannot work on DC supply, because mutual induction can only be occur on AC supply
78. Why Transformers are used?	Transformers are used to step up or step down the AC voltage.
79. What are the main parts of transformer?	The main parts of transformers are: 1- Laminated core 2- Primary & Secondary windings
80. Why core & windings of transformer are dipped in mineral oil?	Core and windings of transformer are dipped in mineral oil for cooling and insulation purpose
81. Why HT winding over lapped LT winding on same limb of transformer core?	Majority of faults occur in HT winding, hence this sequence helps us to access the faulty coil quickly.

Question	Candidate's answer
82. How you provide insulation between turns of coils of transformer?	Insulation between turns of transformer coils is provided with Latheroid paper / impregnated paper /diamond dotted paper / cable paper
83. How you take the size of transformer coil?	The size of transformer coil is measured taking dimensions of height, inner & outer diameter of coil / coils, taking size of winding wire and counting number of turns of coil
84. What is meant by turn ratio of transformer?	Transformer turn ratio is the ratio between turns of primary winding and turns of secondary winding
85. What sequence you will adopt for inserting coil on core limb?	<p>The sequence of inserting coil on core limb is:</p> <ul style="list-style-type: none"> ➤ Coil insertion on core limb ➤ Re-assembling of upper limb of core ➤ Fitting of channel of core ➤ Fixing of channel of core

This formative assessment relates to the training programme: Electrical Machine Winding Technician	CS Code: 0713001134	Level: 3	Version:
Module Title: Carry out Re-Assembly of Machine	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> 25. Assessment Task 1: Prepare for work to carryout re- assembly of machine 26. Assessment Task 2: Arrange parts of the Machine 27. Assessment Task 3: Re-assemble the Machine 28. Assessment Task 4: Ensure Quality of Repair Work 29. Assessment Task 5: Ensure safe storing/placing of Machine 30. Assessment Task 6: Tag the Machine ready for delivery </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> <p> ➤ Clear Passage ➤ Cleanliness ➤ Adequate light ➤ Ventilation </p> <p>Assessment Task 2</p> <p> Performance Criteria 1: Identify the required parts of machine Performance Criteria 2: Collect the required parts Performance Criteria 3: Count total number of parts for deficiency Performance Criteria 4: Arrange parts of the machine in sequential order </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 parts of machine in sequential order</p> <p>Performance Criteria 4: Perform Re-assembling of machine as per numbering of parts</p> <p>Performance Criteria 5: Adjust/Align parts of machine as per marking</p> <p>Performance Criteria 6: Verify tightening of nut bolts with torque Wrench</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: Perform physical inspection of the Re-Assembled Machine</p> <p>Performance Criteria 4: Perform Megger test of machine</p> <p>Performance Criteria 5: Energize/Power Up the machine</p> <p>Performance Criteria 6: Perform test run of machine</p> <ul style="list-style-type: none"> ➤ Observe vibration ➤ Observe sound ➤ Measure Input current ➤ Observe Heat ➤ Check output
	<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: Prepare site for safe storage of machine</p> <p>Performance Criteria 4: Collect machine from workbench</p> <p>Performance Criteria 5: Shift machine to the safe storing site</p> <p>Performance Criteria 6: Ensure safe storing/placing of machine</p>
	<p>Assessment Task 6</p> <p>Performance Criteria 1: Prepare delivery tags</p> <p>Performance Criteria 2: Identify the machine to be tagged</p> <p>Performance Criteria 3: Tag the machine</p> <p>Performance Criteria 4: Update record</p> <p>Performance Criteria 5: Prepare final bill of repair</p> <p>Performance Criteria 6: Communicate client/customer regarding readiness of machine</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	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓		✓		
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)	
Assessment Task 1 :Prepare for work to carryout re-assembly of machine	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: Arrange parts of the Machine		Description of assessment task 2		

During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Identify the required parts of machine			
2	Performance criteria 2: Collect the required parts			
3	Performance criteria 3: Count total number of parts for deficiency			
4	Performance criteria 4: Arrange parts of the machine in sequential order			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3: Re-assemble the Machine	Description of assessment task 3
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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: Collect parts of machine in sequential order			
4	Performance criteria 4: Perform Re-assembling of machine as per numbering of parts			
5	Performance criteria 5: Adjust/Align parts of machine as per marking			
6	Performance criteria 6: Verify tightening of nut bolts with torque Wrench			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4: Ensure Quality of Repair Work	Description of assessment task 4
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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 inspection of the Re-Assembled Machine			
4	Performance criteria 4: Perform Megger test of machine			
5	Performance criteria 5: Energize/Power Up the machine			
6	Performance criteria 6: Perform test run of machine <ul style="list-style-type: none"> ➤ Observe vibration ➤ Observe sound ➤ Measure Input current ➤ Observe Heat ➤ Check output 			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 5: Ensure safe storing/placing of Machine		Description of assessment task 5		
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: Prepare site for safe storage of machine			
4	Performance criteria 4: Collect machine from workbench			
5	Performance criteria 5: Shift machine to the safe storing site			
6	Performance criteria 6: Ensure safe storing/placing of machine			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 6: Tag the Machine ready for delivery		Description of assessment task 6		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Performance criteria 1: Prepare delivery tags			
2	Performance criteria 2: Identify the machine to be tagged			
3	Performance criteria 3: Tag the machine			
4	Performance criteria 4: Update record			
5	Performance criteria 5: Prepare final bill of repair			
6	Performance criteria 6: Communicate client/customer regarding readiness of machine			
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: 3	Version:
Module Title: Carry out Re-Assembly of Machine	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: 3	Version:
Module Title: Carry out Re-Assembly of Machine	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
86. What is sequential process of re-assembling of machine?	The sequential process of re-assembling of machine is: <ul style="list-style-type: none">➤ Matching numbering of parts➤ Putting parts in sequential order➤ Adjusting / aligning parts of machine➤ Final checking of tightening of bolts
87. What observations you will observe during test run of machine after performing repair work?	Following observations will be observed during test run of machine after repair work: <ul style="list-style-type: none">➤ Vibration➤ Sound➤ Heating➤ Measurement of input current➤ Checking of output
88. Why Megger test is performed?	Megger Test is performed to check the following: <ol style="list-style-type: none">1. Open Circuit2. Short Circuit3. Insulation Condition4. Earth Fault/Leakage
89. What are main factors of quality of repair work?	Although the quality of the repair is still largely dependent on the individual compo site repair technician's experience and skill, only the repair workshop, not the individual who makes the repair, must be certified.
90. How to Store Tools & Equipment?	Delegate a portion of your workshop, shed or basement closet as a place to store tools. Clean out the junk and clutter and make a space only for tools. Find the parts, Locate cords, bits, nails and screws and organize them. Clean out dirt and debris from tools. Set up racks. Create an inventory.
91. Why inventory cards are used?	Keeping track of your inventory is important for being able to control costs, keep your system up to date and discover any discrepancies that may exist between what your inventory system says and what you physically count. Inventory control tags can help us to accomplish this.
92. How you can create safe working environment?	Workplace safety should never be taken lightly. Any workshop regardless of size must account for safety regulations, steps and more detailed options for their staff from the get-go. Preventative measures against accidents and/or workplace-related deaths are key for fostering a healthy, safe work environment. Safe working environment can be achieved by: <ol style="list-style-type: none">1. Wearing Proper Uniforms2. Designating Proper Emergency Exits3. Promoting Open Discussions4. Promoting Health Codes5. Proofing The Building

(Summative Assessment)

Instruction Sheet for the Candidate

Title of Qualification: Electrical Machine Winding Technician	CS Code:	Level: 3	Version:
Competency Standard Title: Disassemble Machine at Workshop Estimate Repair / Replacement Cost Diagnose Fault of Machine(Motor) Perform Motor Rewinding Perform Transformer Rewinding Carry out Re- Assembly of Machine	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 04 hrs for each task (for practical demonstration & assessment):</p> <p>Assessment Task 1: Perform rewinding of the given (25 KVA Transformer) , Carry out its reassembly and prepare bill of cost.</p> <p>Assessment Task 2: Diagnose fault of the given (20 HP Motor),Perform its rewinding and prepare bill of cost.</p>

	<p>Assessment Task 1: Perform rewinding of the given (25 KVA Transformer) , Carry out its reassembly and prepare bill of cost.</p>
Performance Criteria 1.	Identify the required tools , equipment & PPE's
Performance Criteria 2.	Check functional condition of the required PPE's/Tools, equipment.
Performance Criteria 3.	Use the required tools equipment and PPE's as per job demand.
Performance Criteria 4.	Ensure safe working conditions
a. Clear Passage	
b. Cleanliness	
c. Adequate light	
d. Ventilation	
Performance Criteria 5.	Record shifting of machine {transformer} to work bench
Performance Criteria 6.	Prepare list of the materials/parts required for Rewinding of transformer.
Performance Criteria 7.	Estimate quantity & cost of the required materials / faulty parts of machine
Performance Criteria 8.	Estimate labour cost on machine
Performance Criteria 9.	Calculate the accumulative cost on machine
Performance Criteria 10.	Inform the client / customer about total cost
Performance Criteria 11.	Remove cover of transformer
Performance Criteria 12.	Identify faulty coil
Performance Criteria 13.	Disconnect connections of faulty coil
Performance Criteria 14.	Disassemble the channel of core
Performance Criteria 15.	Remove the required part of core
Performance Criteria 16.	Remove the faulty coil / coils from the limb of core
Performance Criteria 17.	Ensure proper placing of removed coils
Performance Criteria 18.	Collect the faulty coil
Performance Criteria 19.	Measure / calculate:
a. Dimensions (Height, inner & outer diameter) of coil / coils	
b. Size of winding wire	
c. No of turns of coil	
Performance Criteria 20.	Collect data from name plate of transformer
Performance Criteria 21.	Compile data of faulty coil / coils of transformer
Performance Criteria 22.	Collect material required for rewinding
Performance Criteria 23.	Collect winding data
Performance Criteria 24.	Collect/Prepare former as per required dimensions(Volume)
Performance Criteria 25.	Verify the size of former according to the coil
Performance Criteria 26.	Collect former
Performance Criteria 27.	Fix former on winding machine
Performance Criteria 28.	Wrap two, three layers of latheroid paper on the former
Performance Criteria 29.	Fasten one end of winding wire with former
Performance Criteria 30.	Put small pieces of cotton tape on former for coil binding
Performance Criteria 31.	Wind quarter length of coil
Performance Criteria 32.	Pull the cotton tape to bind the wound turns
Performance Criteria 33.	Complete winding of first layer of coil
Performance Criteria 34.	Wrap latheroid paper over first layer of coil
Performance Criteria 35.	Complete winding of all coil layers according to number of turns
Performance Criteria 36.	Bind the coil with cotton tape

	<p>Performance Criteria 37. Apply varnish on last / end layer of coil</p> <p>Performance Criteria 38. Remove the former from winding machine</p> <p>Performance Criteria 39. Remove the former from the coil</p> <p>Performance Criteria 40. Insert the wound coil over the limb of core</p> <p>Performance Criteria 41. Assemble the opened layer of the core</p> <p>Performance Criteria 42. Fit the channel on core</p> <p>Performance Criteria 43. Fix the channel on core</p> <p>Performance Criteria 44. Make connection as per data / rating plate of transformer</p> <p>Performance Criteria 45. Perform joints soldering of coils connections</p> <p>Performance Criteria 46. Collect specifications from data / rating plate of transformer</p> <p>Performance Criteria 47. Calculate turn ratio of transformer</p> <p>Performance Criteria 48. Place the transformer's coil assembly / live part in baking oven</p> <p>Performance Criteria 49. Set specific temperature of the baking oven</p> <p>Performance Criteria 50. Perform baking of coil assembly / live part</p> <p>Performance Criteria 51. identify the required parts of machine</p> <p>Performance Criteria 52. Collect the required parts</p> <p>Performance Criteria 53. Count total number of parts for deficiency</p> <p>Performance Criteria 54. Arrange parts of the machine in sequential order</p> <p>Performance Criteria 55. Perform Re-assembling of machine as per numbering of parts:</p> <p>Performance Criteria 56. Adjust/Align parts of machine as per marking</p> <p>Performance Criteria 57. Verify tightening of nut bolts with torque Wrench</p> <p>Performance Criteria 58. Perform physical inspection of the Re-Assembled Machine</p> <p>Performance Criteria 59. Perform Megger test of machine</p> <p>Performance Criteria 60. Energize/Power Up the machine</p> <p>Performance Criteria 61. Perform test run of machine</p> <ol style="list-style-type: none"> Observe vibration Observe sound Measure Input current Observe Heat Check output <p>Performance Criteria 62. Prepare site for safe storage of machine</p> <p>Performance Criteria 63. Collect machine from workbench</p> <p>Performance Criteria 64. Shift machine to the safe storing site</p> <p>Performance Criteria 65. Ensure safe storing/placing of machine</p> <p>Performance Criteria 66. Prepare delivery tags</p> <p>Performance Criteria 67. Identify the machine to be tagged</p> <p>Performance Criteria 68. Tag the machine</p> <p>Performance Criteria 69. Prepare final bill of repair</p> <p>Performance Criteria 70. Communicate client/customer regarding readiness of machine</p>
	<p>Assessment Task 2: Diagnose fault of the given (20 HP Motor),Perform its rewinding and prepare bill of cost</p> <p>Performance Criteria 1. Identify the required tools , equipment & PPE's</p> <p>Performance Criteria 2. Check functional condition of the required PPE's/Tools, equipment.</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 Adequate light Ventilation</p> <p>Performance Criteria 5. Perform testing with Megger</p> <ul style="list-style-type: none"> • Ground/Earth Fault • Short Circuit • Open Circuit <p>Performance Criteria 6. Record test result</p> <p>Performance Criteria 7. Check alignment of rotor shaft with the help of dial gauge</p> <p>Performance Criteria 8. Check the rotor shaft size as per bearing size</p> <p>Performance Criteria 9. Check run out of the rotor shaft</p> <p>Performance Criteria 10. Inspect the bearing/bush for</p> <ul style="list-style-type: none"> • noise • Axial/Radial Play/Looseness • Stickiness • Lubrication • Breakage <p>Performance Criteria 11. Locate faulty parts of motor</p> <p>Performance Criteria 12. Prepare list of the materials/parts required for repair/replacement</p> <p>Performance Criteria 13. Estimate quantity & cost of the required materials / faulty parts of machine</p> <p>Performance Criteria 14. Estimate labour cost on machine</p> <p>Performance Criteria 15. Calculate the accumulative cost on machine</p> <p>Performance Criteria 16. Inform the client / customer about total cost</p> <p>Performance Criteria 17. Perform shifting of faulty parts of motor to work bench</p> <p>Performance Criteria 18. Perform marking at motor body for correct re-fitting at both ends</p> <p>Performance Criteria 19. Dis-assemble motor</p> <p>Performance Criteria 20. Store rotor and stator after appropriate tagging</p> <p>Performance Criteria 21. Cut fastening threads</p> <p>Performance Criteria 22. Record the connection details of stator coils</p> <p>Performance Criteria 23. Locate faulty winding coils</p> <p>Performance Criteria 24. Cut faulty winding coils from both ends of stator core</p> <p>Performance Criteria 25. Remove faulty coils from stator core</p> <p>Performance Criteria 26. Count / measure and record:</p> <ul style="list-style-type: none"> • Number of turns of each coil • Pole pitch • Coil span • Weight of each coil • Size of winding wire of each coil <p>Performance Criteria 27. Estimate total weight of wire required for rewinding</p> <p>Performance Criteria 28. Verify size of winding wire</p> <p>Performance Criteria 29. Estimate length of required lathered paper</p> <p>Performance Criteria 30. Prepare list of material required for rewinding</p> <p>Performance Criteria 31. Collect the required material for rewinding</p> <p>Performance Criteria 32. Clean laminations of the core</p> <p>Performance Criteria 33. Set laminations of the core</p> <p>Performance Criteria 34. Perform marking on lathered paper according to size of core slots</p> <p>Performance Criteria 35. Perform cutting of lathered paper according to marking</p> <p>Performance Criteria 36. Insert lathered paper into core slots</p>
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	<p>Performance Criteria 37. Collect winding data</p> <p>Performance Criteria 38. Interpret winding diagram</p> <p>Performance Criteria 39. Collect the former of appropriate size</p> <p>Performance Criteria 40. Make / adjust former according to coil span</p> <p>Performance Criteria 41. Verify adjustment of former according to coil span</p> <p>Performance Criteria 42. Fix and adjust former according to coil span</p> <p>Performance Criteria 43. Collect the already adjusted former</p> <p>Performance Criteria 44. Collect relevant size winding wire</p> <p>Performance Criteria 45. Prepare required number of coil sets</p> <p>Performance Criteria 46. Calculate the total weight of winding coils</p> <p>Performance Criteria 47. Collect core and the sets of coils to be inserted in core</p> <p>Performance Criteria 48. Insert coils one by one in the core slots according to winding diagram</p> <p>Performance Criteria 49. Set the coils in core slots</p> <p>Performance Criteria 50. Verify the sequence of coil insertion</p> <p>Performance Criteria 51. Insert lathered paper or bamboo wedge to prevent coils from slipping out from the core slots</p> <p>Performance Criteria 52. Collect Core having coils inserted in it</p> <p>Performance Criteria 53. Insert appropriate size sleeves on one side of coils ends</p> <p>Performance Criteria 54. Remove varnish insulation from ends of coils</p> <p>Performance Criteria 55. Interlink coils end as per number of poles and winding diagram</p> <p>Performance Criteria 56. Connect supply leads according winding diagram with coils</p> <p>Performance Criteria 57. Check that the coils have sound:</p> <ul style="list-style-type: none"> • Continuity • Insulation between overlapping coils • Insulation between coils and core <p>Performance Criteria 58. Verify the connections</p> <p>Performance Criteria 59. Solder the joints</p> <p>Performance Criteria 60. Slide sleeves over the joints to insulate the joint</p> <p>Performance Criteria 61. Press the winding coils to ward outer edge of core</p> <p>Performance Criteria 62. Collect newly wound core</p> <p>Performance Criteria 63. Perform winding test to verify</p> <ul style="list-style-type: none"> • Continuity • Insulation between overlapping coils • Insulation between coil and core • Megger Test <p>Performance Criteria 64. Put latheroid paper between two coils to strengthen insulation on both sides of core ends</p> <p>Performance Criteria 65. Perform binding of coil with binding thread or cotton tape on both sides of core ends</p> <p>Performance Criteria 66. Press the coil ends toward outer side of core</p> <p>Performance Criteria 67. Verify that the coils have sound:</p> <ul style="list-style-type: none"> • Continuity • Insulation between each other • Insulation between coil and core <p>Performance Criteria 68. Varnish the winding</p> <p>Performance Criteria 69. Verify that the coils have sound:</p> <ul style="list-style-type: none"> • Continuity • Insulation between each other • Insulation between coil and core <p>Performance Criteria 70. Perform baking of winding</p> <p>Performance Criteria 71. Perform winding tests to verify that the coils have:</p>
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	<ul style="list-style-type: none"> • Continuity • Insulation between each other • Insulation between coil and core <p>Performance Criteria 72. Collect the required parts</p> <p>Performance Criteria 73. Count total number of parts for deficiency</p> <p>Performance Criteria 74. Arrange parts of the machine in sequential</p> <p>Performance Criteria 75. Collect parts of machine in sequential order</p> <p>Performance Criteria 76. Perform Re-assembling of machine as per numbering of parts:</p> <p>Performance Criteria 77. Adjust/Align parts of machine as per marking</p> <p>Performance Criteria 78. Verify tightening of nut bolts with torque Wrench</p> <p>Performance Criteria 79. Perform physical inspection of the Re-Assembled Machine</p> <p>Performance Criteria 80. Perform Megger test of machine</p> <p>Performance Criteria 81. Energize/Power Up the machine</p> <p>Performance Criteria 82. Perform test run of machine</p> <ul style="list-style-type: none"> • Observe vibration • Observe sound • Measure Input current • Observe Heat • Check output <p>Performance Criteria 83. Collect machine from workbench</p> <p>Performance Criteria 84. Shift machine to the safe storing site</p> <p>Performance Criteria 85. Tag the machine</p> <p>Performance Criteria 86. Prepare final bill of repair</p> <p>Performance Criteria 87. Communicate client/customer regarding readiness of machine</p>
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	<p>Portfolios required at the time of assessment (if any) like trainees/students 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>
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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)

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:.....
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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				✓			

Each Assessment Task (with performance criteria)				
Assessment Task 1: Perform rewinding of the given (25 KVA Transformer) , Carry out its reassembly and prepare bill of cost.		Description of assessment task:		
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.	Record shifting of machine {transformer} to work bench			
6.	Prepare list of the materials/parts required for Rewinding of transformer.			
7.	Estimate quantity & cost of the required materials / faulty parts of machine			
8.	Estimate labour cost on machine			
9.	Calculate the accumulative cost on machine			
10.	Inform the client / customer about total cost			
11.	Remove cover of transformer			
12.	Identify faulty coil			
13.	Disconnect connections of faulty coil			
14.	Disassemble the channel of core			
15.	Remove the required part of core			
16.	Remove the faulty coil / coils from the limb of core			
17.	Ensure proper placing of removed coils			
18.	Collect the faulty coil			
19.	Measure / calculate: <ul style="list-style-type: none"> • Dimensions (Height, inner & outer diameter) of coil / coils • Size of winding wire • No of turns of coil 			
20.	Collect data from name plate of transformer			
21.	Compile data of faulty coil / coils of transformer			
22.	Collect material required for rewinding			
23.	Collect winding data			
24.	Collect/Prepare former as per required dimensions(Volume)			

25.	Verify the size of former according to the coil			
26.	Collect former			
27.	Fix former on winding machine			
28.	Wrap two, three layers of latheroid paper on the former			
29.	Fasten one end of winding wire with former			
30.	Put small pieces of cotton tape on former for coil binding			
31.	Wind quarter length of coil			
32.	Pull the cotton tape to bind the wound turns			
33.	Complete winding of first layer of coil			
34.	Wrap latheroid paper over first layer of coil			
35.	Complete winding of all coil layers according to number of turns			
36.	Bind the coil with cotton tape			
37.	Apply varnish on last / end layer of coil			
38.	Remove the former from winding machine			
39.	Remove the former from the coil			
40.	Insert the wound coil over the limb of core			
41.	Assemble the opened layer of the core			
42.	Fit the channel on core			
43.	Fix the channel on core			
44.	Make connection as per data / rating plate of transformer			
45.	Perform joints soldering of coils connections			
46.	Collect specifications from data / rating plate of transformer			
47.	Calculate turn ratio of transformer			
48.	Place the transformer's coil assembly / live part in baking oven			
49.	Set specific temperature of the baking oven			
50.	Perform baking of coil assembly / live part			
51.	identify the required parts of machine			
52.	Collect the required parts			
53.	Count total number of parts for deficiency			
54.	Arrange parts of the machine in sequential order			
55.	Perform Re-assembling of machine as per numbering of parts:			
56.	Adjust/Align parts of machine as per marking			
57.	Verify tightening of nut bolts with torque Wrench			
58.	Perform physical inspection of the Re-Assembled Machine			

59.	Perform Megger test of machine			
60.	Energize/Power Up the machine			
61.	Perform test run of machine <ul style="list-style-type: none"> • Observe vibration • Observe sound • Measure Input current • Observe Heat • Check output 			
62.	Prepare site for safe storage of machine			
63.	Collect machine from workbench			
64.	Shift machine to the safe storing site			
65.	Ensure safe storing/placing of machine			
66.	Prepare delivery tags			
67.	Identify the machine to be tagged			
68.	Tag the machine			
69.	Prepare final bill of repair			
70.	Communicate client/customer regarding readiness of machine			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Each Assessment Task (with performance criteria)				
Assessment Task 2: Diagnose fault of the given (20 HP Motor),Perform its rewinding and prepare bill of cost.		Description of assessment task:		
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 testing with Megger <ul style="list-style-type: none"> • Ground/Earth Fault • Short Circuit • Open Circuit 			
6.	Record test result			
7.	Check alignment of rotor shaft with the help of dial gauge			
8.	Check the rotor shaft size as per bearing size			
9.	Check run out of the rotor shaft			
10.	Inspect the bearing/bush for <ul style="list-style-type: none"> • noise • Axial/Radial Play/Looseness • Stickiness • Lubrication • Breakage 			
11.	Locate faulty parts of motor			
12.	Prepare list of the materials/parts required for repair/replacement			
13.	Estimate quantity & cost of the required materials / faulty parts of machine			
14.	Estimate labour cost on machine			
15.	Calculate the accumulative cost on machine			
16.	Inform the client / customer about total cost			
17.	Perform shifting of faulty parts of motor to work bench			
18.	Perform marking at motor body for correct re-fitting at both ends			
19.	Dis-assemble motor			
20.	Store rotor and stator after appropriate tagging			
21.	Cut fastening threads			
22.	Record the connection details of stator coils			

23.	Locate faulty winding coils			
24.	Cut faulty winding coils from both ends of stator core			
25.	Remove faulty coils from stator core			
26.	Count / measure and record: <ul style="list-style-type: none"> • Number of turns of each coil • Pole pitch • Coil span • Weight of each coil • Size of winding wire of each coil 			
27.	Estimate total weight of wire required for rewinding			
28.	Verify size of winding wire			
29.	Estimate length of required lathered paper			
30.	Prepare list of material required for rewinding			
31.	Collect the required material for rewinding			
32.	Clean laminations of the core			
33.	Set laminations of the core			
34.	Perform marking on lathered paper according to size of core slots			
35.	Perform cutting of lathered paper according to marking			
36.	Insert lathered paper into core slots			
37.	Collect winding data			
38.	Interpret winding diagram			
39.	Collect the former of appropriate size			
40.	Make / adjust former according to coil span			
41.	Verify adjustment of former according to coil span			
42.	Fix and adjust former according to coil span			
43.	Collect the already adjusted former			
44.	Collect relevant size winding wire			
45.	Prepare required number of coil sets			
46.	Calculate the total weight of winding coils			
47.	Collect core and the sets of coils to be inserted in core			
48.	Insert coils one by one in the core slots according to winding diagram			
49.	Set the coils in core slots			
50.	Verify the sequence of coil insertion			
51.	Insert lathered paper or bamboo wedge to prevent coils from slipping out from the core slots			
52.	Collect Core having coils inserted in it			
53.	Insert appropriate size sleeves on one side of coils ends			
54.	Remove varnish insulation from ends of coils			
55.	Interlink coils end as per number of poles and winding diagram			

56.	Connect supply leads according winding diagram with coils			
57.	Check that the coils have sound: <ul style="list-style-type: none"> • Continuity • Insulation between overlapping coils • Insulation between coils and core 			
58.	Verify the connections			
59.	Solder the joints			
60.	Slide sleeves over the joints to insulate the joint			
61.	Press the winding coils to ward outer edge of core			
62.	Collect newly wound core			
63.	Perform winding test to verify <ul style="list-style-type: none"> • Continuity • Insulation between overlapping coils • Insulation between coil and core • Megger Test 			
64.	Put latheroid paper between two coils to strengthen insulation on both sides of core ends			
65.	Perform binding of coil with binding thread or cotton tape on both sides of core ends			
66.	Press the coil ends toward outer side of core			
67.	Verify that the coils have sound: <ul style="list-style-type: none"> • Continuity • Insulation between each other • Insulation between coil and core 			
68.	Varnish the winding			
69.	Verify that the coils have sound: <ul style="list-style-type: none"> • Continuity • Insulation between each other • Insulation between coil and core 			
70.	Perform baking of winding			
71.	Perform winding tests to verify that the coils have: <ul style="list-style-type: none"> • Continuity • Insulation between each other • Insulation between coil and core 			
72.	Collect the required parts			
73.	Count total number of parts for deficiency			
74.	Arrange parts of the machine in sequential			
75.	Collect parts of machine in sequential order			
76.	Perform Re-assembling of machine as per numbering of parts:			
77.	Adjust/Align parts of machine as per marking			
78.	Verify tightening of nut bolts with torque Wrench			
79.	Perform physical inspection of the Re-Assembled Machine			
80.	Perform Megger test of machine			
81.	Energize/Power Up the machine			

82.	Perform test run of machine <ul style="list-style-type: none"> Observe vibration Observe sound Measure Input current Observe Heat Check output 			
83.	Collect machine from workbench			
84.	Shift machine to the safe storing site			
85.	Tag the machine			
86.	Prepare final bill of repair			
87.	Communicate client/customer regarding readiness of machine			
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				
4	.....		
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessors Judgment Guide
TITLE OF QUALIFICATION
(Summative Assessment / knowledge part)

Title of Qualification: Electrical Machine Winding Technician	CS Code:	Level: 3	Version:
Competency Standard Title: Disassemble Machine at Workshop Estimate Repair / Replacement Cost Diagnose Fault of Machine(Motor) Perform Motor Rewinding Perform Transformer Rewinding Carry out Re- Assembly of Machine	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:3	Version:
Competency Standard Title: Disassemble Machine at Workshop Estimate Repair / Replacement Cost Diagnose Fault of Machine(Motor) Perform Motor Rewinding Perform Transformer Rewinding Carry out Re- Assembly of Machine	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
1. What is meant by electricity?	Electricity is the physical flow of electrons, referred to as an electrical current. Electricity is an energy carrier that efficiently delivers the energy found in primary sources to end users, who in turn convert it into energy services.
2. What are the types of electricity?	There are two types of Electricity, Static Electricity and Current Electricity. Static Electricity is made by rubbing together two or more objects and making friction while Current electricity is the flow of electric charge across an electrical field.
3. What are types of electric circuits?	There are three types of circuits; Closed Circuit Open Circuit Short Circuit
4. What are types of electric circuit's connections?	Series Circuit. A series circuit has only one path for electricity to flow from one point to another. Parallel Circuit. A parallel circuit has multiple paths for electricity to flow from one point to another. Complex Circuit: combined Series-Parallel Circuit.
5. Define Ohm's law?	Ohm's law states that the potential difference (voltage) across an ideal conductor is proportional to the current through it. The constant of proportionality is called the "resistance", R. Ohm's Law is given by: $V = I R$ where V is the potential difference between two points which include a resistance R.
6. What is the difference between DC and AC?	Electricity flows in two ways: either in an alternating current (AC) or in a direct current (DC). Electricity or "current" is nothing but the movement of electrons through a conductor, like a wire. The difference between AC and DC lies in the direction in which the electrons flow. In DC, the electrons flow steadily in a single direction, or "forward." In AC, electrons keep switching directions, sometimes going "forward" and then going "backward." Alternating current is the best way to transmit electricity over large distances.
7. What is the difference between star & delta connection?	In STAR connection, the starting or finishing ends (Similar ends) of three phases(coils) are connectedtogether to form the neutral point. The phase voltage is 1.732 times lower than line voltage in star connection, while the phase and Line current remains same in this connection.. In DELTA connection, the opposite ends of three coils are connected together. In other words, the end of each coil is connected with the start of another coil, and three wires are taken out from the coil joints. There is no Neutral Point in Delta Connection. Phase and Line voltage are same while phase current is 1.732 times lower than Line current.

Question	Candidate's answer
8. What is meant by magnet wire?	Magnet wire or enameled wire is a copper or aluminium wire coated with a very thin layer of insulation. It is used in the construction of transformers, inductors, motors, speakers, hard disk head actuators, electromagnets, and other applications that require tight coils of insulated wire.
9. What types of winding wires are used?	Following winding wires are used; Enameled round copper wire & enameled round aluminium wire: Enameled rectangular /flat copper wire / enameled copper strip. Enameled rectangular /flat aluminium wire / enameled aluminium strip.
10. What is the difference between copper winding and Aluminium winding?	First, aluminum's conductivity is lower than copper's. To compensate, aluminum magnet wire must have larger cross-sections than the equivalent copper wire to offer the same conductance. This means windings wound with aluminum wire will likely have greater volume as compared with an equivalent copper wire motor.
11. What is meant by SWG?	British Standard Wire Gauge is a set of wire sizes given by BS 3737:1964, and is generally abbreviated to SWG. It is also known as: Imperial Wire Gauge or British Standard Gauge. Size of thickness of winding wires ranging from 0 to 36 can be measured with SWG.
12. What is the difference between Class F and Class H insulation?	The main difference is that the class designations refer to the withstand temperature of the insulation material. Thus, H class has a withstand temperature level of 180 ° C for the coils and F class of 145 ° C.

Question	Candidate's answer																														
13. What is meant by insulation rating?	<p>The insulation rating is the maximum allowable winding (hot spot) temperature operating at an ambient temperature of 40°C. Insulation systems are classified by the temperature rating. The following table summarizes the different insulation systems available.</p> <table><tr><th>Insulation Rating</th><th>Insulation Class</th><th>Average Winding Temperature Rise</th><th>Hot Spot Temperature Rise</th><th>Maximum Winding Temperature</th></tr><tr><td>Class 105</td><td>A</td><td>55 ° C</td><td>65 ° C</td><td>105 ° C</td></tr><tr><td>Class 150 or 130</td><td>B</td><td>80 ° C</td><td>110° C</td><td>150 ° C</td></tr><tr><td>Class 180</td><td>F</td><td>115 ° C</td><td>145 ° C</td><td>180 ° C</td></tr><tr><td>Class 200</td><td>N</td><td>130 ° C</td><td>160 ° C</td><td>200 ° C</td></tr><tr><td>Class 220</td><td>H</td><td>150 ° C</td><td>180° C</td><td>220 ° C</td></tr></table>	Insulation Rating	Insulation Class	Average Winding Temperature Rise	Hot Spot Temperature Rise	Maximum Winding Temperature	Class 105	A	55 ° C	65 ° C	105 ° C	Class 150 or 130	B	80 ° C	110° C	150 ° C	Class 180	F	115 ° C	145 ° C	180 ° C	Class 200	N	130 ° C	160 ° C	200 ° C	Class 220	H	150 ° C	180° C	220 ° C
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14. What is meant by transformer?	A transformer is a passive electrical device that transfers electrical energy between two or more circuits . It is used to step up or step down AC voltage without changing its frequency. It works on mutual induction principle.																														
15. What types of energy losses occurred in transformer?	<p>Transformer energy losses are dominated by;</p> <ul style="list-style-type: none">Winding losses (Copper losses in primary & secondary windings, it changes twice with change in load)Core losses. (Iron losses included eddy current & hysteresis losses, it is constant loss which occurs constantly from without load to full load)																														

