

# ELECTRICAL EQUIPMENT INSTALLATION AND REPAIR

**Learner Guide**

National Vocational  
Certificate Level 2

Version 1 - December 2014

**Published by**

National Vocational and Technical Training Commission  
Government of Pakistan

**Headquarter**

Plot 38, Kirthar Road, Sector H-9/4, Islamabad, Pakistan  
www.navttc.org

**Responsible**

Director General Skills Standard and Curricula, National Vocational and Technical Training Commission  
National Deputy Head, TVET Reform Support Programme, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

**Layout & design**

SAP Communications

**Photo Credits**

TVET Reform Support Programme

**URL links**

Responsibility for the content of external websites linked in this publication always lies with their respective publishers. TVET Reform Support Programme expressly dissociates itself from such content.

This document has been produced with the technical assistance of the TVET Reform Support Programme, which is funded by the European Union, the Embassy of the Kingdom of the Netherlands, the Federal Republic of Germany and the Royal Norwegian Embassy and has been commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in close collaboration with the National Vocational and Technical Training Commission (NAVTTTC) as well as provincial Technical Education and Vocational Training Authorities (TEVTAs), Punjab Vocational Training Council (PVTC), Qualification Awarding Bodies (QABs) and private sector organizations.

**Document Version**

December, 2014  
Islamabad, Pakistan

A grayscale photograph of a hand holding a large bundle of electrical cables. The cables are bundled together and have various connectors. The background is a plain, light-colored wall.

# ELECTRICAL EQUIPMENT INSTALLATION AND REPAIR

**Learner Guide**

National Vocational  
Certificate Level 2

Version 1 - December 2014



**ASSESSMENT MATERIAL**

**EVIDENCE GUIDE**

**Qualification**  
Electrical Equipment Installation and Repair  
**CS Code:**  
**Level: 2**  
**Credit: 17**  
**Version: 1**

**PERFORM PREVENTIVE MAINTENANCE AS PART OF ELECTRICAL OPERATION**

**CONTENTS**

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/equipment, material and context of assessment

**ASSESSMENT AND ASSESSOR DETAILS**

**Competent**  **Not Yet Competent**

**Assessment**  **Re-Assessment**

Assessor's Name \_\_\_\_\_ Assessor's Code \_\_\_\_\_

Assessor's Signature \_\_\_\_\_ Date 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

**CANDIDATE DETAILS**

Candidate's Name \_\_\_\_\_  
   
First Name Last Name

Father's Name \_\_\_\_\_

Institute Name and District \_\_\_\_\_

CNIC/BFORM # 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Registration Number issued by Assessment Body \_\_\_\_\_

Gender Male  Female  Transgender

Candidate's Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.

Candidate's Signature \_\_\_\_\_

**ASSESSMENT RESULTS SUMMARY FORM**

You can use this coversheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTCC**

**NAVTTCC OFFICE ONLY**

1. DATE FORM RECEIVED: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

2. DATE ENTERED INTO DATABASE: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM PREVENTIVE MAINTENANCE AS PART OF ELECTRICAL OPERATION		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> <li>Perform preventive maintenance of electrical equipment.</li> </ul>		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> <li>Answer all questions your Assessor may have during the practical assessment.</li> </ul>		
Other Requirements			✓		<ul style="list-style-type: none"> <li>N/A</li> </ul>		

# 2

# CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name .....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

## GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **one hour** timeframe:

- Carry out preventive maintenance of single phase electrical induction motor.

**Important Note:** The following general performance criteria will be followed and performed in all the tasks ( where applicable by the candidate in order to meet this standard :

- Follow precautionary procedures as per requirements of the given tasks
- Select, use and maintain equipment/ tools as per requirement of the task
- Report to supervisor in case of any emergency after taking necessary actions
- Complete the work by following sequence of the operations
- Perform task(s) within standard timeframe

ACTIVITIES	CANDIDATE RESPONSE
<p><b>1. Complete practical task of performing preventive maintenance as part of electrical operation under observation by an assessor</b></p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> <li>• Carry out preventive maintenance of single phase electrical induction motor               <ul style="list-style-type: none"> <li>✓ Check the main electric supply line voltage for the preventive maintenance of single phase electrical induction motor</li> <li>✓ Check and repair/replace the ON/OFF switch of single phase electrical induction motor</li> <li>✓ Test the continuity of single phase electrical induction motor with ohm meter</li> <li>✓ Test the insulation of single phase electrical induction motor with Meggar</li> <li>✓ Check and repair/replace the faulty cables of single phase electrical induction motor.</li> <li>✓ Check the short circuit (winding short circuit or short to body) of single phase electrical induction motor with test lamp.</li> <li>✓ Check input voltage and current of single phase electrical induction motor with multi-meter</li> <li>✓ Check and repair/replace the electric circuit breaker of single phase electrical induction motor from electrical distribution panel</li> <li>✓ Check and fix the foundation of single phase electrical induction motor</li> <li>✓ Check RPM of single phase electrical induction motor with tachometer.</li> </ul> </li> <li>• General Performance Criteria               <ul style="list-style-type: none"> <li>✓ Follow precautionary procedures as per requirements of the given tasks</li> <li>✓ Select, use and maintain equipment/ tools as per requirement of the task</li> <li>✓ Report to supervisor in case of any emergency after taking necessary actions</li> <li>✓ Complete the work by following sequence of the operations</li> <li>✓ Perform task(s) within standard timeframe</li> </ul> </li> </ul>
<p><b>2. Other requirements</b></p>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<p><b>3. Answer any questions your assessor may have during the practical assessment</b></p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate's Name ..... Father's Name.....

### INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete practical task of performing preventive maintenance as part of electrical operation under observation by an assessor</b>	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Carry out preventive maintenance of single phase electrical induction motor	Checked the main electric supply line voltage for the preventive maintenance of single phase electrical induction motor			
	Checked and repair/replace the ON/OFF switch of single phase electrical induction motor			
	Tested the continuity of single phase electrical induction motor with ohm meter			
	Tested the insulation of single phase electrical induction motor with Meggar			
	Checked and repaired/replaced the faulty cables of single phase electrical induction motor.			
	Checked the short circuit (winding short circuit or short to body) of single phase electrical induction motor with test lamp.			
	Checked input voltage and current of single phase electrical induction motor with multi-meter			
	Checked and repaired/replaced the electric circuit breaker of single phase electrical induction motor from electrical distribution panel			
	Checked and fixed the foundation of single phase electrical induction motor			
	Checked RPM of single phase electrical induction motor with tachometer.			
General Performance Criteria	Followed precautionary procedures as per requirements of the given tasks			
	Selected, used and maintained equipment/ tools as per requirement of the task			
	Reported to supervisor in case of any emergency after taking necessary actions			
	Completed the work by following sequence of the operations			
	Performed task(s) within standard timeframe			
<b>2. Other requirements</b>	N/A			

**3. Answer any questions the assessor may have during the practical assessment**

Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.

Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.



# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment.</li> <li>List of consumable items required during the service</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> environment.

<b>2. List of tools and equipment required (for five candidates)</b>		
S. No	Items	Quantity
1	Electrician tool kit (Complete)	5
2	AVO meter	5
3	Megger	5
4	Tachometer	5

<b>3. List of consumable items required (for five candidates)</b>		
S. No	Items	Quantity
1	ON/OFF switch	5
2	Cable (Three core) 3/0.029	As per requirement
3	PVC Clamps	As per requirement
4	Fuse Holder	5
5	Fuse wire	As per requirement
6	PVC Board (Size will be as per requirement)	5
7	Screws (Different sizes)	As per requirement
8	Insulation tape/PVC Connector	As per requirement
9	Colour chalk	As per requirement
10	Bulb holder	5
11	Bulb 200W	5
12	Electric Circuit Breaker	5



**ASSESSMENT MATERIAL**

**EVIDENCE GUIDE**

**Qualification**  
Electrical Equipment Installation and Repair  
**CS Code:**  
**Level: 2**  
**Credit: 17**  
**Version: 1**

**PERFORM CORRECTIVE MAINTENANCE AS PART OF ELECTRICAL OPERATION**

**CONTENTS**

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/equipment, material and context of assessment

**ASSESSMENT AND ASSESSOR DETAILS**

**Competent**  **Not Yet Competent**

**Assessment**  **Re-Assessment**

Assessor's Name ..... Assessor's Code .....

Assessor's Signature ..... Date 

--	--	--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

**CANDIDATE DETAILS**

Candidate's Name .....  
First Name Last Name

Father's Name .....

Institute Name and District .....

CNIC/BFORM # 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Registration Number issued by Assessment Body .....

Gender Male  Female  Transgender

Candidate's Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.

Candidate's Signature .....

**ASSESSMENT RESULTS SUMMARY FORM**

You can use this coversheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTCC**

**NAVTTCC OFFICE ONLY**

1. DATE FORM RECEIVED: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

2. DATE ENTERED INTO DATABASE: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM CORRECTIVE MAINTENANCE AS PART OF ELECTRICAL OPERATION		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> <li>Perform corrective maintenance of electrical equipment.</li> </ul>		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> <li>Answer all questions your Assessor may have during the practical assessment.</li> </ul>		
Other Requirements			✓		<ul style="list-style-type: none"> <li>N/A</li> </ul>		

# 2

## CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name .....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

### GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **45 minutes** timeframe:

- Carry out corrective maintenance of electric iron.

**Important Note:** The following general performance criteria will be followed and performed in all the tasks ( where applicable by the candidate in order to meet this standard :

- Follow precautionary procedures as per requirements of the given tasks
- Select, use and maintain equipment/ tools as per requirement of the task
- Report to supervisor in case of any emergency after taking necessary actions
- Complete the work by following sequence of the operations
- Perform task(s) within standard timeframe

ACTIVITIES	CANDIDATE RESPONSE
1. Complete practical task of performing corrective maintenance as part of electrical operation under observation by an assessor	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> <li>• Carry out corrective maintenance of electric iron.               <ul style="list-style-type: none"> <li>✓ Check the temperature selector switch of electric iron manually for corrective maintenance</li> <li>✓ Remove the name plate from insulated handle of electric iron for corrective maintenance</li> <li>✓ Connect electric iron with series test board for corrective maintenance</li> <li>✓ Check the minimum and maximum temperature of electric iron through selector switch for corrective maintenance</li> <li>✓ Adjust the thermostat of electric iron through temperature adjuster to set the bimetallic strip for corrective maintenance</li> <li>✓ Check the minimum and maximum temperature of electric iron through selector switch and observe tripping temperature after corrective maintenance</li> <li>✓ Fix name plate on insulated handle of electric iron after corrective maintenance</li> </ul> </li> <li>• General Performance Criteria               <ul style="list-style-type: none"> <li>✓ Follow precautionary procedures as per requirements of the given tasks</li> <li>✓ Select, use and maintain equipment/ tools as per requirement of the task</li> <li>✓ Report to supervisor in case of any emergency after taking necessary actions</li> <li>✓ Complete the work by following sequence of the operations</li> <li>✓ Perform task(s) within standard timeframe</li> </ul> </li> </ul>
2. Other requirements	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
3. Answer any questions your assessor may have during the practical assessment	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate's Name ..... Father's Name.....

### INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete practical task of performing corrective maintenance as part of electrical operation under observation by an assessor</b>	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Carry out corrective maintenance of electric iron	Checked the temperature selector switch of electric iron manually for corrective maintenance			
	Removed the name plate from insulated handle of electric iron for corrective maintenance			
	Connected electric iron with series test board for corrective maintenance			
	Checked the minimum and maximum temperature of electric iron through selector switch for corrective maintenance			
	Adjusted the thermostat of electric iron through temperature adjuster to set the bimetallic strip for corrective maintenance			
	Checked the minimum and maximum temperature of electric iron through selector switch and observe tripping temperature after corrective maintenance			
	Fixed name plate on insulated handle of electric iron after corrective maintenance			
General Performance Criteria	Followed precautionary procedures as per requirements of the given tasks			
	Selected, used and maintained equipment/ tools as per requirement of the task			
	Reported to supervisor in case of any emergency after taking necessary actions			
	Completed the work by following sequence of the operations			
	Performed task(s) within standard timeframe			
<b>2. Other requirements</b>	N/A			

**3. Answer any questions the assessor may have during the practical assessment**

Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.

Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.

# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment.</li> <li>List of consumable items required during the service</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> environment.

<b>2. List of tools and equipment required (for five candidates)</b>		
S. No	Items	Quantity
1	Electrician tool kit (Complete)	5

<b>3. List of consumable items required (for five candidates)</b>		
S. No	Items	Quantity
1	PVC Board (Size = as per requirement)	5
2	Lamp Holder	5
3	Two pin socket	5
4	Bulb 200W	5
5	Wire 3/0.029"	As per requirement
6	Screws (Different sizes)	As per requirement



**ASSESSMENT MATERIAL**

**EVIDENCE GUIDE**

**Qualification**  
Electrical Equipment  
Installation and Repair  
**CS Code:**  
**Level: 2**  
**Credit: 17**  
**Version: 1**

**TEST ELECTRICAL AND ELECTRONICS PARAMETERS**

**CONTENTS**

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/equipment, material and context of assessment

**ASSESSMENT AND ASSESSOR DETAILS**

**Competent**  **Not Yet Competent**

**Assessment**  **Re-Assessment**

Assessor's Name ..... Assessor's Code .....

Assessor's Signature ..... Date 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

**CANDIDATE DETAILS**

Candidate's Name .....  
First Name Last Name

Father's Name .....

Institute Name and District .....

CNIC/BFORM # 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Registration Number issued by Assessment Body .....

Gender Male  Female  Transgender

Candidate's Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.

Candidate's Signature .....

**ASSESSMENT RESULTS SUMMARY FORM**

You can use this coversheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTCC**

**NAVTTCC OFFICE ONLY**

1. DATE FORM RECEIVED: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

2. DATE ENTERED INTO DATABASE: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY



# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: TEST ELECTRICAL AND ELECTRONICS PARAMETERS		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> <li>Test electrical and electronics parameters of electrical equipment.</li> </ul>		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> <li>Answer all questions your Assessor may have during the practical assessment.</li> </ul>		
Other Requirements			✓		<ul style="list-style-type: none"> <li>N/A</li> </ul>		

# 2

## CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name .....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

### GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **30 minutes** timeframe:

- Test and repair/replace the electrical and electronics components of pedestal fan.

**Important Note:** The following general performance criteria will be followed and performed in all the tasks ( where applicable by the candidate in order to meet this standard :

- Follow precautionary procedures as per requirements of the given tasks
- Select, use and maintain equipment/ tools as per requirement of the task
- Report to supervisor in case of any emergency after taking necessary actions
- Complete the work by following sequence of the operations
- Perform task(s) within standard timeframe

ACTIVITIES	CANDIDATE RESPONSE
1. Complete practical task of testing electrical and electronics parameters under observation by an assessor	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> <li>• Test and repair/replace the electrical and electronics components of pedestal fan               <ul style="list-style-type: none"> <li>✓ Check and repair/replace power cable and selector switch of pedestal fan by performing continuity test with ohm meter</li> <li>✓ Check and replace the capacitor of pedestal fan by performing capacitance test with capacitance meter</li> <li>✓ Check the starting and running electric windings of pedestal fan with test lamp/ohm meter</li> </ul> </li> <li>• General Performance Criteria               <ul style="list-style-type: none"> <li>✓ Follow precautionary procedures as per requirements of the given tasks</li> <li>✓ Select, use and maintain equipment/ tools as per requirement of the task</li> <li>✓ Report to supervisor in case of any emergency after taking necessary actions</li> <li>✓ Complete the work by following sequence of the operations</li> <li>✓ Perform task(s) within standard timeframe</li> </ul> </li> </ul>
2. Other requirements	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
3. Answer any questions your assessor may have during the practical assessment	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate's Name ..... Father's Name.....

### INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete practical task of testing electrical and electronics parameters under observation by an assessor</b>	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Test and repair/replace the electrical and electronics components of pedestal fan	Checked and repaired/replaced power cable and selector switch of pedestal fan by performing continuity test with ohm meter			
	Checked and replaced the capacitor of pedestal fan by performing capacitance test with capacitance meter			
	Checked the starting and running electric windings of pedestal fan with test lamp/ohm meter			
General Performance Criteria	Followed precautionary procedures as per requirements of the given tasks			
	Selected, used and maintained equipment/ tools as per requirement of the task			
	Reported to supervisor in case of any emergency after taking necessary actions			
	Completed the work by following sequence of the operations			
	Performed task(s) within standard timeframe			
<b>2. Other requirements</b>	N/A			

**3. Answer any questions the assessor may have during the practical assessment**

Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.

Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.

# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment.</li> <li>List of consumable items required during the service</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> environment.

<b>2. List of tools and equipment required (for five candidates)</b>		
S. No	Items	Quantity
1	Electrician tool kit (Complete)	5

<b>3. List of consumable items required (for five candidates)</b>		
S. No	Items	Quantity
1	PVC Board (Size = as per requirement)	5
2	Lamp Holder	5
3	Two pin socket	5
4	Bulb 200W	5
5	Wire 3/0.029"	As per requirement
6	Screws (Different sizes)	As per requirement
7	Capacitor (Different values)	As per requirement
8	Cable (Two core)	As per requirement



**ASSESSMENT MATERIAL**

**EVIDENCE GUIDE**

**Qualification**

Electrical Equipment Installation and Repair

**CS Code:**

**Level: 2**

**Credit: 17**

**Version: 1**

**ASSEMBLE ELECTRICAL MACHINES**

**CONTENTS**

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/equipment, material and context of assessment

**ASSESSMENT AND ASSESSOR DETAILS**

**Competent**  **Not Yet Competent**

**Assessment**  **Re-Assessment**

Assessor's Name \_\_\_\_\_ Assessor's Code \_\_\_\_\_

Assessor's Signature \_\_\_\_\_ Date 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

**CANDIDATE DETAILS**

Candidate's Name \_\_\_\_\_  
First Name Last Name

Father's Name \_\_\_\_\_

Institute Name and District \_\_\_\_\_

CNIC/BFORM # 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Registration Number issued by Assessment Body \_\_\_\_\_

Gender Male  Female  Transgender

Candidate's Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.

Candidate's Signature \_\_\_\_\_

**ASSESSMENT RESULTS SUMMARY FORM**

You can use this coversheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTCC**

**NAVTTCC OFFICE ONLY**

1. DATE FORM RECEIVED: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

2. DATE ENTERED INTO DATABASE: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: ASSEMBLE ELECTRICAL MACHINES		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> <li>Perform assembling of electrical equipment.</li> </ul>		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> <li>Answer all questions your Assessor may have during the practical assessment.</li> </ul>		
Other Requirements			✓		<ul style="list-style-type: none"> <li>N/A</li> </ul>		

# 2

# CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name .....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

## GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **one hour** timeframe:

- Carry out assembling of electrical juicer machine.

**Important Note:** The following general performance criteria will be followed and performed in all the tasks ( where applicable by the candidate in order to meet this standard :

- Follow precautionary procedures as per requirements of the given tasks
- Select, use and maintain equipment/ tools as per requirement of the task
- Report to supervisor in case of any emergency after taking necessary actions
- Complete the work by following sequence of the operations
- Perform task(s) within standard timeframe

ACTIVITIES	CANDIDATE RESPONSE
<p><b>1. Complete practical task of assembling electrical machines under observation by an assessor</b></p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> <li>• Carry out assembling of electrical juicer machine               <ul style="list-style-type: none"> <li>✓ Interpret circuit diagram/layout of electrical juicer machine (given by assessor)</li> <li>✓ Assemble electric motor of electrical juicer machine with armature, field poles, side covers, brass bush and carbon brushes</li> <li>✓ Perform continuity and current leakage test of electrical juicer machine with ohm meter/test lamp for assembling</li> <li>✓ Fit the electric motor in the body of the electrical juicer machine for assembling</li> <li>✓ Fit the rubber coupling on the top of Armature shaft for the assembling of electrical juicer machine</li> <li>✓ Fit the control penal inside the body for the assembling of electrical juicer machine</li> <li>✓ Connect the power cable and motor assembly with control penal as per circuit diagram for the assembling of electrical juicer machine</li> <li>✓ Fit the bottom cover with body for the assembling of electrical juicer machine</li> <li>✓ Perform test run of juicer machine after the assembling</li> </ul> </li> <li>• General Performance Criteria               <ul style="list-style-type: none"> <li>✓ Follow precautionary procedures as per requirements of the given tasks</li> <li>✓ Select, use and maintain equipment/ tools as per requirement of the task</li> <li>✓ Report to supervisor in case of any emergency after taking necessary actions</li> <li>✓ Complete the work by following sequence of the operations</li> <li>✓ Perform task(s) within standard timeframe</li> </ul> </li> </ul>
<p><b>2. Other requirements</b></p>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<p><b>3. Answer any questions your assessor may have during the practical assessment</b></p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>



# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate's Name ..... Father's Name.....

### INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete practical task of assembling electrical machines under observation by an assessor</b>	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Carry out assembling of electrical juicer machine	Interpreted circuit diagram/layout of electrical juicer machine (given by assessor)			
	Assembled electric motor of electrical juicer machine with armature, field poles, side covers, brass bush and carbon brushes			
	Performed continuity and current leakage test of electrical juicer machine with ohm meter/test lamp for assembling			
	Fit the electric motor in the body of the electrical juicer machine for assembling			
	Fit the rubber coupling on the top of Armature shaft for the assembling of electrical juicer machine			
	Fit the control penal inside the body for the assembling of electrical juicer machine			
	Connected the power cable and motor assembly with control penal as per circuit diagram for the assembling of electrical juicer machine			
	Fit the bottom cover with body for the assembling of electrical juicer machine			
	Performed test run of juicer machine after the assembling			
General Performance Criteria	Followed precautionary procedures as per requirements of the given tasks			
	Selected, used and maintained equipment/ tools as per requirement of the task			
	Reported to supervisor in case of any emergency after taking necessary actions			
	Completed the work by following sequence of the operations			
	Performed task(s) within standard timeframe			
<b>2. Other requirements</b>	N/A			

**3. Answer any questions the assessor may have during the practical assessment**

Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.

Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.

# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment.</li> <li>List of consumable items required during the service</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> environment.

<b>2. List of tools and equipment required (for five candidates)</b>		
S. No	Items	Quantity
1	Electrician tool kit (Complete)	5
2	Electric Juicer Motor (Complete)	5
3	Juicer Body	5

<b>3. List of consumable items required (for five candidates)</b>		
S. No	Items	Quantity
1	ON/OFF switch	5
2	Power Cable	As per requirement
3	Coupling rubber	5



**ASSESSMENT MATERIAL**

**EVIDENCE GUIDE**

**Qualification**

Electrical Equipment Installation and Repair

**CS Code:**

**Level: 2**

**Credit: 17**

**Version: 1**

**ASSEMBLE ELECTRICAL APPLIANCES**

**CONTENTS**

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/equipment, material and context of assessment

**ASSESSMENT AND ASSESSOR DETAILS**

**Competent**  **Not Yet Competent**

**Assessment**  **Re-Assessment**

Assessor's Name \_\_\_\_\_ Assessor's Code \_\_\_\_\_

Assessor's Signature \_\_\_\_\_ Date 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

**CANDIDATE DETAILS**

Candidate's Name \_\_\_\_\_  
First Name Last Name

Father's Name \_\_\_\_\_

Institute Name and District \_\_\_\_\_

CNIC/BFORM # 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Registration Number issued by Assessment Body \_\_\_\_\_

Gender Male  Female  Transgender

Candidate's Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.

Candidate's Signature \_\_\_\_\_

**ASSESSMENT RESULTS SUMMARY FORM**

You can use this coversheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTCC**

**NAVTTCC OFFICE ONLY**

1. DATE FORM RECEIVED: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

2. DATE ENTERED INTO DATABASE: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: ASSEMBLE ELECTRICAL APPLIANCES		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> <li>Perform assembling of electrical appliances.</li> </ul>		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> <li>Answer all questions your Assessor may have during the practical assessment.</li> </ul>		
Other Requirements			✓		<ul style="list-style-type: none"> <li>N/A</li> </ul>		

# 2

## CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name .....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

### GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **45 minutes** timeframe:

- Carry out assembling of electrical Iron.

**Important Note:** The following general performance criteria will be followed and performed in all the tasks ( where applicable by the candidate in order to meet this standard :

- Follow precautionary procedures as per requirements of the given tasks
- Select, use and maintain equipment/ tools as per requirement of the task
- Report to supervisor in case of any emergency after taking necessary actions
- Complete the work by following sequence of the operations
- Perform task(s) within standard timeframe

ACTIVITIES	CANDIDATE RESPONSE
1. Complete practical task of assembling electrical appliances under observation by an assessor	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> <li>• Carry out assembling of electrical Iron               <ul style="list-style-type: none"> <li>✓ Check the current leakage and continuity of electric iron element with ohm meter/ test lamp</li> <li>✓ Install the element of electric iron on iron base with rubber hammer</li> <li>✓ Install the thermostat switch and bi-metallic strip in the base of electric Iron</li> <li>✓ Fit the weight plate and steel cover of electric Iron on the Iron base with screws</li> <li>✓ Fix the thermostat needle and insulated handle on top of the steel cover of electric Iron</li> <li>✓ Connect the neon light and power cable as per circuit diagram of electric Iron</li> <li>✓ Carryout the current leakage, short circuit and short to earth test of electric Iron with ohm meter and test lamp</li> <li>✓ Test electric Iron temperature with selector switch to check electric Iron performance</li> </ul> </li> <li>• General Performance Criteria               <ul style="list-style-type: none"> <li>✓ Follow precautionary procedures as per requirements of the given tasks</li> <li>✓ Select, use and maintain equipment/ tools as per requirement of the task</li> <li>✓ Report to supervisor in case of any emergency after taking necessary actions</li> <li>✓ Complete the work by following sequence of the operations</li> <li>✓ Perform task(s) within standard timeframe</li> </ul> </li> </ul>
2. Other requirements	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
3. Answer any questions your assessor may have during the practical assessment	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate's Name ..... Father's Name.....

### INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete practical task of assembling electrical appliances under observation by an assessor</b>	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Carry out assembling of electrical Iron	Checked the current leakage and continuity of electric iron element with ohm meter/ test lamp			
	Installed the element of electric iron on iron base with rubber hammer			
	Installed the thermostat switch and bi-metallic strip in the base of electric Iron			
	Fit the weight plate and steel cover of electric Iron on the Iron base with screws			
	Fixed the thermostat needle and insulated handle on top of the steel cover of electric Iron			
	Connected the neon light and power cable as per circuit diagram of electric Iron			
	Carried out the current leakage, short circuit and short to earth test of electric Iron with ohm meter and test lamp			
General Performance Criteria	Tested electric Iron temperature with selector switch to check electric Iron performance			
	Followed precautionary procedures as per requirements of the given tasks			
	Selected, used and maintained equipment/ tools as per requirement of the task			
	Reported to supervisor in case of any emergency after taking necessary actions			
	Completed the work by following sequence of the operations			
	Performed task(s) within standard timeframe			
<b>2. Other requirements</b>	N/A			

**3. Answer any questions the assessor may have during the practical assessment**

Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.

Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.



# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment.</li> <li>List of consumable items required during the service</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> environment.

<b>2. List of tools and equipment required (for five candidates)</b>		
S. No	Items	Quantity
1	Electrician tool kit (Complete)	5
2	Multi-meter	5
3	Electric Iron body (Complete)	5
4	Heating tube (Element)	5
5	Thermostat switch	5
6	Sole Plate	5
7	Light (Neon lamp)	5
8	Cover	5
9	Back Cover	5
10	Handle	5

<b>3. List of consumable items required (for five candidates)</b>		
S. No	Items	Quantity
1	Cable (two core)	As per requirement
2	Thimbles	As per requirement
3	Series test lamp	5



<b>ASSESSMENT MATERIAL</b>  <b>EVIDENCE GUIDE</b>	<h2>PERFORM INSTALLATION OF ELECTRICAL PRODUCTS AND APPLIANCES</h2>
<b>Qualification</b> Electrical Equipment Installation and Repair <b>CS Code:</b> <b>Level: 2</b> <b>Credit: 17</b> <b>Version: 1</b>	

<b>CONTENTS</b>	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgment Guide 4. List of required tools/equipment, material and context of assessment
-----------------	--

<b>ASSESSMENT AND ASSESSOR DETAILS</b>	<b>Competent</b> <input type="checkbox"/> <span style="margin-left: 200px;"><b>Not Yet Competent</b></span> <input type="checkbox"/>																			
	<b>Assessment</b> <input type="checkbox"/> <span style="margin-left: 200px;"><b>Re-Assessment</b></span> <input type="checkbox"/>																			
	Assessor's Name _____ Assessor's Code _____ Assessor's Signature _____ Date _____ <table border="1" style="float: right; margin-left: 20px;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td colspan="2" style="text-align: center;">DD MM</td> <td colspan="8" style="text-align: center;">YYYY</td> </tr> </table>											DD MM		YYYY						
DD MM		YYYY																		

<b>CANDIDATE DETAILS</b>	Candidate's Name _____ <small style="display: flex; justify-content: space-between; width: 100%;"> <span>First Name</span> <span>Last Name</span> </small>
	Father's Name _____
	Institute Name and District _____
	CNIC/BFORM # <table border="1" style="display: inline-table; width: 150px; height: 20px; vertical-align: middle;"></table>
	Registration Number issued by Assessment Body _____
	Gender Male <input type="checkbox"/> Female <input type="checkbox"/> Transgender <input type="checkbox"/>
	Candidate's Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal. Candidate's Signature _____

<b>ASSESSMENT RESULTS SUMMARY FORM</b>	You can use this coversheet as an <i>Assessment Results Summary Form</i> . Simply post a photocopy of this completed coversheet to <b>NAVTTCC</b>
--	---

<b>NAVTTCC OFFICE ONLY</b>	1. DATE FORM RECEIVED: <table border="1" style="display: inline-table; width: 80px; height: 20px;"></table> DD MM YYYY	2. DATE ENTERED INTO DATABASE: <table border="1" style="display: inline-table; width: 80px; height: 20px;"></table> DD MM YYYY
----------------------------	--	--

# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM INSTALLATION OF ELECTRICAL PRODUCTS AND APPLIANCES		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> <li>Perform installation of electrical products and appliances.</li> </ul>		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> <li>Answer all questions your Assessor may have during the practical assessment.</li> </ul>		
Other Requirements			✓		<ul style="list-style-type: none"> <li>N/A</li> </ul>		

# 2

## CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name .....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

### GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **one hour** timeframe:

- Carry out installation of UPS and batteries.

**Important Note:** The following general performance criteria will be followed and performed in all the tasks ( where applicable by the candidate in order to meet this standard :

- Follow precautionary procedures as per requirements of the given tasks
- Select, use and maintain equipment/ tools as per requirement of the task
- Report to supervisor in case of any emergency after taking necessary actions
- Complete the work by following sequence of the operations
- Perform task(s) within standard timeframe

ACTIVITIES	CANDIDATE RESPONSE
1. Complete practical task of performing installation of electrical products and appliances under observation by an assessor	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> <li>• Carry out installation of UPS and batteries               <ul style="list-style-type: none"> <li>✓ Select the proper place for installation of UPS</li> <li>✓ Install the wiring for UPS installation according to wiring layout (given by assessor)</li> <li>✓ Install the light plug and connect with wiring for UPS installation</li> <li>✓ Check the AC supply of light plug with multi-meter or test lamp for UPS installation</li> <li>✓ Install the UPS and batteries near the light plug</li> <li>✓ Connect the positive and negative brass clamps on battery terminals polarity wise for UPS installation</li> <li>✓ Connect the power cable of UPS in light plug according to phase for UPS installation</li> <li>✓ Connect the output plug shoe in the UPS output according to phase for UPS installation</li> <li>✓ Check the main AC supply input and output from UPS for UPS installation</li> <li>✓ Check the function of inverter of UPS supply for UPS installation</li> <li>✓ Check the charging current of battery for UPS installation</li> </ul> </li> <li>• General Performance Criteria               <ul style="list-style-type: none"> <li>✓ Follow precautionary procedures as per requirements of the given tasks</li> <li>✓ Select, use and maintain equipment/ tools as per requirement of the task</li> <li>✓ Report to supervisor in case of any emergency after taking necessary actions</li> <li>✓ Complete the work by following sequence of the operations</li> <li>✓ Perform task(s) within standard timeframe</li> </ul> </li> </ul>
2. Other requirements	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
3. Answer any questions your assessor may have during the practical assessment	My answers to questions are correct and demonstrate my understanding of the topics and their application.

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate's Name ..... Father's Name.....

### INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete practical task of performing installation of electrical products and appliances under observation by an assessor</b>	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Carry out installation of UPS and batteries	Selected the proper place for installation of UPS			
	Installed the wiring for UPS installation according to wiring layout (given by assessor)			
	Installed the light plug and connected with wiring for UPS installation			
	Checked the AC supply of light plug with multi-meter or test lamp for UPS installation			
	Installed the UPS and batteries near the light plug			
	Connected the positive and negative brass clamps on battery terminals polarity wise for UPS installation			
	Connected the power cable of UPS in light plug according to phase for UPS installation			
	Connected the output plug shoe in the UPS output according to phase for UPS installation			
	Checked the main AC supply input and output from UPS for UPS installation			
	Checked the function of inverter of UPS supply for UPS installation			
Checked the charging current of battery for UPS installation				
General Performance Criteria	Followed precautionary procedures as per requirements of the given tasks			
	Selected, used and maintained equipment/ tools as per requirement of the task			
	Reported to supervisor in case of any emergency after taking necessary actions			
	Completed the work by following sequence of the operations			
	Performed task(s) within standard timeframe			
<b>2. Other requirements</b>	N/A			

**3. Answer any questions the assessor may have during the practical assessment**

Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.

Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.

# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment.</li> <li>List of consumable items required during the service</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> environment.

<b>2. List of tools and equipment required (for five candidates)</b>		
S. No	Items	Quantity
1	Electrician tool kit (Complete)	5
2	Multi-meter	5
3	Clamp meter	5
4	UPS with accessories	5
5	Battery	5

<b>3. List of consumable items required (for five candidates)</b>		
S. No	Items	Quantity
1	PVC / wooden board	As per requirement
2	Light plug	5
3	Three pin shoe	10
4	Wire 3/0.029"	As per requirement
5	PVC clamp	As per requirement



**ASSESSMENT MATERIAL**

**EVIDENCE GUIDE**

**Qualification**

Electrical Equipment Installation and Repair

**CS Code:**

**Level: 2**

**Credit: 8**

**Version: 1**

**INSTALL ELECTRICAL MACHINES**

**CONTENTS**

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/equipment, material and context of assessment

**ASSESSMENT AND ASSESSOR DETAILS**

**Competent**  **Not Yet Competent**

**Assessment**  **Re-Assessment**

Assessor's Name \_\_\_\_\_ Assessor's Code \_\_\_\_\_

Assessor's Signature \_\_\_\_\_ Date 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

**CANDIDATE DETAILS**

Candidate's Name \_\_\_\_\_  
First Name Last Name

Father's Name \_\_\_\_\_

Institute Name and District \_\_\_\_\_

CNIC/BFORM # 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Registration Number issued by Assessment Body \_\_\_\_\_

Gender Male  Female  Transgender

Candidate's Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.

Candidate's Signature \_\_\_\_\_

**ASSESSMENT RESULTS SUMMARY FORM**

You can use this coversheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTCC**

**NAVTTCC OFFICE ONLY**

1. DATE FORM RECEIVED: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

2. DATE ENTERED INTO DATABASE: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY



# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: INSTALL ELECTRICAL MACHINES		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> <li>Perform installation of electrical machines.</li> </ul>		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> <li>Answer all questions your Assessor may have during the practical assessment.</li> </ul>		
Other Requirements			✓		<ul style="list-style-type: none"> <li>N/A</li> </ul>		

# 2

## CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name .....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

### GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **30 minutes** timeframe:

- Carry out installation of ceiling fan.

**Important Note:** The following general performance criteria will be followed and performed in all the tasks ( where applicable by the candidate in order to meet this standard :

- Follow precautionary procedures as per requirements of the given tasks
- Select, use and maintain equipment/ tools as per requirement of the task
- Report to supervisor in case of any emergency after taking necessary actions
- Complete the work by following sequence of the operations
- Perform task(s) within standard timeframe

ACTIVITIES	CANDIDATE RESPONSE
1. Complete practical task of installing electrical machines under observation by an assessor	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> <li>• Carry out installation of ceiling fan               <ul style="list-style-type: none"> <li>✓ Install the switch board supply of ceiling fan for the installation of ceiling fan</li> <li>✓ Lay down the PVC pipe /duct for wiring and install wires for the installation of ceiling fan</li> <li>✓ Connect the wires with main supply and switch board for the installation of ceiling fan</li> <li>✓ Install the ceiling rose for connection for the installation of ceiling fan</li> <li>✓ Check the current leakage of ceiling fan with series test board for the installation of ceiling fan</li> <li>✓ Install the blades with body of ceiling fan for the installation of ceiling fan</li> <li>✓ Hang the ceiling fan with iron hook of roof for the installation of ceiling fan</li> <li>✓ Connect the cable of ceiling fan with ceiling rose for the installation of ceiling fan</li> <li>✓ Check the test run of ceiling fan with ON/OFF switch after the installation of ceiling fan</li> </ul> </li> <li>• General Performance Criteria               <ul style="list-style-type: none"> <li>✓ Follow precautionary procedures as per requirements of the given tasks</li> <li>✓ Select, use and maintain equipment/ tools as per requirement of the task</li> <li>✓ Report to supervisor in case of any emergency after taking necessary actions</li> <li>✓ Complete the work by following sequence of the operations</li> <li>✓ Perform task(s) within standard timeframe</li> </ul> </li> </ul>
2. Other requirements	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
3. Answer any questions your assessor may have during the practical assessment	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate's Name ..... Father's Name.....

### INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete practical task of installing electrical machines under observation by an assessor</b>	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Carry out installation of ceiling fan	Installed the switch board supply of ceiling fan for the installation of ceiling fan			
	Laid down the PVC pipe /duct for wiring and installed wires for the installation of ceiling fan			
	Connected the wires with main supply and switch board for the installation of ceiling fan			
	Installed the ceiling rose for connection for the installation of ceiling fan			
	Checked the current leakage of ceiling fan with series test board for the installation of ceiling fan			
	Installed the blades with body of ceiling fan for the installation of ceiling fan			
	Hanged the ceiling fan with iron hook of roof for the installation of ceiling fan			
	Connected the cable of ceiling fan with ceiling rose for the installation of ceiling fan			
General Performance Criteria	Checked the test run of ceiling fan with ON/OFF switch after the installation of ceiling fan			
	Followed precautionary procedures as per requirements of the given tasks			
	Selected, used and maintained equipment/ tools as per requirement of the task			
	Reported to supervisor in case of any emergency after taking necessary actions			
	Completed the work by following sequence of the operations			
	Performed task(s) within standard timeframe			
<b>2. Other requirements</b>	N/A			

**3. Answer any questions the assessor may have during the practical assessment**

Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.

Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.

# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment.</li> <li>List of consumable items required during the service</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> environment.

<b>2. List of tools and equipment required (for five candidates)</b>		
S. No	Items	Quantity
1	Electrician tool kit (Complete)	5
2	Ceiling fan (Complete)	5

<b>3. List of consumable items required (for five candidates)</b>		
S. No	Items	Quantity
1	PVC / Wooden Board (Size = as per requirement)	5
2	Lamp Holder	5
3	Two pin socket	5
4	Bulb 200W	5
5	Wire 3/0.029"	As per requirement
6	Screws (Different sizes)	As per requirement
7	PVC pipe / duct	As per requirement
8	PVC saddle	As per requirement
9	Screw (Different types)	As per requirement
10	Insulation tape / PVC connector	As per requirement



**ASSESSMENT MATERIAL**

**EVIDENCE GUIDE**

**Qualification**  
Electrical Equipment Installation and Repair  
**CS Code:**  
**Level: 2**  
**Credit: 8**  
**Version: 1**

**PERFORM INSTALLATION OF ELECTRICAL MACHINES**

**CONTENTS**

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/equipment, material and context of assessment

**ASSESSMENT AND ASSESSOR DETAILS**

**Competent**  **Not Yet Competent**

**Assessment**  **Re-Assessment**

Assessor's Name \_\_\_\_\_ Assessor's Code \_\_\_\_\_

Assessor's Signature \_\_\_\_\_ Date 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

**CANDIDATE DETAILS**

Candidate's Name \_\_\_\_\_  
   
First Name Last Name

Father's Name \_\_\_\_\_

Institute Name and District \_\_\_\_\_

CNIC/BFORM # 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Registration Number issued by Assessment Body \_\_\_\_\_

Gender Male  Female  Transgender

Candidate's Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.

Candidate's Signature \_\_\_\_\_

**ASSESSMENT RESULTS SUMMARY FORM**

You can use this coversheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTCC**

**NAVTTCC OFFICE ONLY**

1. DATE FORM RECEIVED: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

2. DATE ENTERED INTO DATABASE: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM INSTALLATION OF ELECTRICAL MACHINES		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> <li>Perform installation of electrical machines.</li> </ul>		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> <li>Answer all questions your Assessor may have during the practical assessment.</li> </ul>		
Other Requirements			✓		<ul style="list-style-type: none"> <li>N/A</li> </ul>		

# 2

## CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name .....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

### GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **30 minutes** timeframe:

- Carry out installation of ceiling fan.

**Important Note:** The following general performance criteria will be followed and performed in all the tasks ( where applicable by the candidate in order to meet this standard :

- Follow precautionary procedures as per requirements of the given tasks
- Select, use and maintain equipment/ tools as per requirement of the task
- Report to supervisor in case of any emergency after taking necessary actions
- Complete the work by following sequence of the operations
- Perform task(s) within standard timeframe

ACTIVITIES	CANDIDATE RESPONSE
1. Complete practical task of performing installation of electrical machines under observation by an assessor	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> <li>• Carry out installation of ceiling fan               <ul style="list-style-type: none"> <li>✓ Install the switch board supply of ceiling fan for the installation of ceiling fan</li> <li>✓ Lay down the PVC pipe /duct for wiring and install wires for the installation of ceiling fan</li> <li>✓ Connect the wires with main supply and switch board for the installation of ceiling fan</li> <li>✓ Install the ceiling rose for connection for the installation of ceiling fan</li> <li>✓ Check the current leakage of ceiling fan with series test board for the installation of ceiling fan</li> <li>✓ Install the blades with body of ceiling fan for the installation of ceiling fan</li> <li>✓ Hang the ceiling fan with iron hook of roof for the installation of ceiling fan</li> <li>✓ Connect the cable of ceiling fan with ceiling rose for the installation of ceiling fan</li> <li>✓ Check the test run of ceiling fan with ON/OFF switch after the installation of ceiling fan</li> </ul> </li> <li>• General Performance Criteria               <ul style="list-style-type: none"> <li>✓ Follow precautionary procedures as per requirements of the given tasks</li> <li>✓ Select, use and maintain equipment/ tools as per requirement of the task</li> <li>✓ Report to supervisor in case of any emergency after taking necessary actions</li> <li>✓ Complete the work by following sequence of the operations</li> <li>✓ Perform task(s) within standard timeframe</li> </ul> </li> </ul>
2. Other requirements	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
3. Answer any questions your assessor may have during the practical assessment	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>



# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate's Name ..... Father's Name.....

### INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete practical task of performing installation of electrical machines under observation by an assessor</b>	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Carry out installation of ceiling fan	Installed the switch board supply of ceiling fan for the installation of ceiling fan			
	Laid down the PVC pipe /duct for wiring and installed wires for the installation of ceiling fan			
	Connected the wires with main supply and switch board for the installation of ceiling fan			
	Installed the ceiling rose for connection for the installation of ceiling fan			
	Checked the current leakage of ceiling fan with series test board for the installation of ceiling fan			
	Installed the blades with body of ceiling fan for the installation of ceiling fan			
	Hanged the ceiling fan with iron hook of roof for the installation of ceiling fan			
	Connected the cable of ceiling fan with ceiling rose for the installation of ceiling fan			
	Checked the test run of ceiling fan with ON/OFF switch after the installation of ceiling fan			
General Performance Criteria	Followed precautionary procedures as per requirements of the given tasks			
	Selected, used and maintained equipment/ tools as per requirement of the task			
	Reported to supervisor in case of any emergency after taking necessary actions			
	Completed the work by following sequence of the operations			
	Performed task(s) within standard timeframe			
<b>2. Other requirements</b>	N/A			

**3. Answer any questions the assessor may have during the practical assessment**

Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.

Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.

# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment.</li> <li>List of consumable items required during the service</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> environment.

<b>2. List of tools and equipment required (for five candidates)</b>		
S. No	Items	Quantity
1	Electrician tool kit (Complete)	5
2	Ceiling fan (Complete)	5

<b>3. List of consumable items required (for five candidates)</b>		
S. No	Items	Quantity
1	PVC / Wooden Board (Size = as per requirement)	5
2	Lamp Holder	5
3	Two pin socket	5
4	Bulb 200W	5
5	Wire 3/0.029"	As per requirement
6	Screws (Different sizes)	As per requirement
7	PVC pipe / duct	As per requirement
8	PVC saddle	As per requirement
9	Screw (Different types)	As per requirement
10	Insulation tape / PVC connector	As per requirement



**ASSESSMENT MATERIAL**

**EVIDENCE GUIDE**

**Qualification**

Electrical Equipment Installation and Repair

**CS Code:**

**Level: 2**

**Credit: 17**

**Version: 1**

**INSTALL DOMESTIC WIRING**

**CONTENTS**

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/equipment, material and context of assessment

**ASSESSMENT AND ASSESSOR DETAILS**

**Competent**  **Not Yet Competent**

**Assessment**  **Re-Assessment**

Assessor's Name \_\_\_\_\_ Assessor's Code \_\_\_\_\_

Assessor's Signature \_\_\_\_\_ Date 

--	--	--	--	--	--	--	--	--	--

 DD MM YYYY

**CANDIDATE DETAILS**

Candidate's Name \_\_\_\_\_  
First Name Last Name

Father's Name \_\_\_\_\_

Institute Name and District \_\_\_\_\_

CNIC/BFORM # 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Registration Number issued by Assessment Body \_\_\_\_\_

Gender Male  Female  Transgender

Candidate's Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.

Candidate's Signature \_\_\_\_\_

**ASSESSMENT RESULTS SUMMARY FORM**

You can use this coversheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTCC**

**NAVTTCC OFFICE ONLY**

1. DATE FORM RECEIVED: 

--	--	--	--	--	--	--	--	--	--

 DD MM YYYY

2. DATE ENTERED INTO DATABASE: 

--	--	--	--	--	--	--	--	--	--

 DD MM YYYY

# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: INSTALL DOMESTIC WIRING		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> <li>Perform installation of domestic wiring.</li> </ul>		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> <li>Answer all questions your Assessor may have during the practical assessment.</li> </ul>		
Other Requirements			✓		<ul style="list-style-type: none"> <li>N/A</li> </ul>		

# 2

# CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name .....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

## GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **one hour** timeframe:

- Carry out installation of main domestic electric distribution board.

**Important Note:** The following general performance criteria will be followed and performed in all the tasks ( where applicable by the candidate in order to meet this standard :

- Follow precautionary procedures as per requirements of the given tasks
- Select, use and maintain equipment/ tools as per requirement of the task
- Report to supervisor in case of any emergency after taking necessary actions
- Complete the work by following sequence of the operations
- Perform task(s) within standard timeframe

ACTIVITIES	CANDIDATE RESPONSE
<p><b>1. Complete practical task of installing domestic wiring under observation by an assessor</b></p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> <li>• Carry out installation of main domestic electric distribution board               <ul style="list-style-type: none"> <li>✓ Interpret circuit diagram (given by assessor) of main electric distribution board for the installation of main domestic electric distribution board</li> <li>✓ Install volt and ampere meters at main electric distribution board for the installation of main domestic electric distribution board</li> <li>✓ Install lamp indicators at main electric distribution board for the installation of main domestic electric distribution board</li> <li>✓ Install change-over switch at main electric distribution board for the installation of main domestic electric distribution board</li> <li>✓ Install earth leakage breaker and circuit breakers for the installation of main domestic electric distribution board</li> <li>✓ Perform connections of main electric distribution for the installation of main domestic electric distribution board</li> <li>✓ Perform test run of main electric distribution board with test lamp after the installation of main domestic electric distribution board</li> <li>✓ Fix the cover of circuit breakers of main electric distribution board after the installation of main domestic electric distribution board</li> </ul> </li> <li>• General Performance Criteria               <ul style="list-style-type: none"> <li>✓ Follow precautionary procedures as per requirements of the given tasks</li> <li>✓ Select, use and maintain equipment/ tools as per requirement of the task</li> <li>✓ Report to supervisor in case of any emergency after taking necessary actions</li> <li>✓ Complete the work by following sequence of the operations</li> <li>✓ Perform task(s) within standard timeframe</li> </ul> </li> </ul>
<p><b>2. Other requirements</b></p>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<p><b>3. Answer any questions your assessor may have during the practical assessment</b></p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application.</p>

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate's Name ..... Father's Name.....

### INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1 Complete practical task of installing domestic wiring under observation by an assessor</b>	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Carry out installation of main domestic electric distribution board	Interpreted circuit diagram (given by assessor) of main electric distribution board for the installation of main domestic electric distribution board			
	Installed volt and ampere meters at main electric distribution board for the installation of main domestic electric distribution board			
	Installed lamp indicators at main electric distribution board for the installation of main domestic electric distribution board			
	Installed change-over switch at main electric distribution board for the installation of main domestic electric distribution board			
	Installed earth leakage breaker and circuit breakers for the installation of main domestic electric distribution board			
	Performed connections of main electric distribution for the installation of main domestic electric distribution board			
	Performed test run of main electric distribution board with test lamp after the installation of main domestic electric distribution board			
	Fixed the cover of circuit breakers of main electric distribution board after the installation of main domestic electric distribution board			
General Performance Criteria	Followed precautionary procedures as per requirements of the given tasks			
	Selected, used and maintained equipment/ tools as per requirement of the task			
	Reported to supervisor in case of any emergency after taking necessary actions			
	Completed the work by following sequence of the operations			
	Performed task(s) within standard timeframe			
<b>2. Other requirements</b>	N/A			

**3. Answer any questions the assessor may have during the practical assessment**

Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.

Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.



# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment.</li> <li>List of consumable items required during the service</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> environment.

<b>2. List of tools and equipment required (for five candidates)</b>		
S. No	Items	Quantity
1	Electrician tool kit (Complete)	5
2	DP housing (Complete)	5
3	Circuit breakers	As per requirement
4	Magnetic Contactor	As per requirement
5	Over Load current relay	5
6	Digital Volt meter	5
7	Digital Ampere meter	5
8	Lamp indicators	15
9	Change-over switch	5

<b>3. List of consumable items required (for five candidates)</b>		
S. No	Items	Quantity
1	Wire 3/0.029"	As per requirement
2	Wire 7/0.029"	As per requirement
3	Screws (Different types)	As per requirement
4	Tie clamp	As per requirement



**ASSESSMENT  
MATERIAL**

**EVIDENCE  
GUIDE**

**Qualification**  
Electrical Equipment  
Installation and Repair  
**CS Code:**  
**Level: 2**  
**Credit: 160**  
**Version: 1**

# ELECTRICAL EQUIPMENT INSTALLATION AND REPAIR

**CONTENTS**

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/equipment, material and context of assessment

**ASSESSMENT AND  
ASSESSOR  
DETAILS**

**Competent**  **Not Yet Competent**

**Assessment**  **Re-Assessment**

Assessor's Name \_\_\_\_\_ Assessor's Code \_\_\_\_\_

Assessor's Signature \_\_\_\_\_ Date 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

**CANDIDATE  
DETAILS**

Candidate's Name \_\_\_\_\_  
First Name Last Name

Father's Name \_\_\_\_\_

Institute Name and District \_\_\_\_\_

CNIC/BFORM # 

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Registration Number issued by Assessment Body \_\_\_\_\_

Gender Male  Female  Transgender

Candidate's Consent I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.

Candidate's Signature \_\_\_\_\_

**ASSESSMENT  
RESULTS  
SUMMARY FORM**

You can use this coversheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTCC**

**NAVTTCC OFFICE  
ONLY**

1. DATE FORM RECEIVED: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

2. DATE ENTERED INTO DATABASE: 

--	--	--	--	--	--	--	--	--	--

  
DD MM YYYY

# 1

## ASSESSMENT SUMMARY & RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF QUALIFICATION: ELECTRICAL EQUIPMENT INSTALLATION AND REPAIR		
Practical Skill Demonstration				✓	<ul style="list-style-type: none"> <li>Perform electrical equipment installation and repair.</li> </ul>		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> <li>Answer all questions your Assessor may have during the practical assessment.</li> </ul>		
Other Requirements			✓		<ul style="list-style-type: none"> <li>N/A</li> </ul>		

# 2

# CANDIDATE ASSESSMENT

Candidate's Name..... Father's Name .....

**ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.**

## GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **five hours** timeframe:

- Carry out preventive maintenance of single phase electrical induction motor.
- Carry out corrective maintenance of electric iron.
- Test and repair/replace the electrical and electronics components of pedestal fan.
- Carry out assembling of electrical juicer machine.
- Carry out assembling of electrical Iron.
- Carry out installation of UPS and batteries.
- Carry out installation of ceiling fan.
- Carry out installation of main domestic electric distribution board.

**Important Note:** The following general performance criteria will be followed and performed in all the tasks ( where applicable by the candidate in order to meet this standard :

- Follow precautionary procedures as per requirements of the given tasks
- Select, use and maintain equipment/ tools as per requirement of the task
- Report to supervisor in case of any emergency after taking necessary actions
- Complete the work by following sequence of the operations
- Perform task(s) within standard timeframe

ACTIVITIES	CANDIDATE RESPONSE
<p><b>1. Complete practical task of Electrical Equipment Installation and Repair under observation by an assessor</b></p>	<p>During a practical assessment, under observation by an assessor, I will correctly :</p> <ul style="list-style-type: none"> <li>• Carry out preventive maintenance of single phase electrical induction motor               <ul style="list-style-type: none"> <li>✓ Check the main electric supply line voltage for the preventive maintenance of single phase electrical induction motor</li> <li>✓ Check and repair/replace the ON/OFF switch of single phase electrical induction motor</li> <li>✓ Test the continuity of single phase electrical induction motor with ohm meter</li> <li>✓ Test the insulation of single phase electrical induction motor with Meggar</li> <li>✓ Check and repair/replace the faulty cables of single phase electrical induction motor.</li> <li>✓ Check the short circuit (winding short circuit or short to body) of single phase electrical induction motor with test lamp.</li> <li>✓ Check input voltage and current of single phase electrical induction motor with multi-meter</li> <li>✓ Check and repair/replace the electric circuit breaker of single phase electrical induction motor from electrical distribution panel</li> <li>✓ Check and fix the foundation of single phase electrical induction motor</li> <li>✓ Check RPM of single phase electrical induction motor with tachometer</li> </ul> </li> <li>• Carry out corrective maintenance of electric iron.               <ul style="list-style-type: none"> <li>✓ Check the temperature selector switch of electric iron manually for corrective maintenance</li> <li>✓ Remove the name plate from insulated handle of electric iron for corrective maintenance</li> <li>✓ Connect electric iron with series test board for corrective maintenance</li> <li>✓ Check the minimum and maximum temperature of electric iron through selector switch for corrective maintenance</li> <li>✓ Adjust the thermostat of electric iron through temperature adjuster to set the bimetallic strip for corrective maintenance</li> <li>✓ Check the minimum and maximum temperature of electric iron through selector switch and observe tripping temperature after corrective maintenance</li> <li>✓ Fix name plate on insulated handle of electric iron after corrective maintenance</li> </ul> </li> </ul>

- Test and repair/replace the electrical and electronics components of pedestal fan
  - ✓ Check and repair/replace power cable and selector switch of pedestal fan by performing continuity test with ohm meter
  - ✓ Check and replace the capacitor of pedestal fan by performing capacitance test with capacitance meter
  - ✓ Check the starting and running electric windings of pedestal fan with test lamp/ohm meter
- Carry out assembling of electrical juicer machine
  - ✓ Interpret circuit diagram/layout of electrical juicer machine (given by assessor)
  - ✓ Assemble electric motor of electrical juicer machine with armature, field poles, side covers, brass bush and carbon brushes
  - ✓ Perform continuity and current leakage test of electrical juicer machine with ohm meter/test lamp for assembling
  - ✓ Fit the electric motor in the body of the electrical juicer machine for assembling
  - ✓ Fit the rubber coupling on the top of Armature shaft for the assembling of electrical juicer machine
  - ✓ Fit the control penal inside the body for the assembling of electrical juicer machine
  - ✓ Connect the power cable and motor assembly with control penal as per circuit diagram for the assembling of electrical juicer machine
  - ✓ Fit the bottom cover with body for the assembling of electrical juicer machine
  - ✓ Perform test run of juicer machine after the assembling
- Carry out assembling of electrical Iron
  - ✓ Check the current leakage and continuity of electric iron element with ohm meter/ test lamp
  - ✓ Install the element of electric iron on iron base with rubber hammer
  - ✓ Install the thermostat switch and bi-metallic strip in the base of electric Iron
  - ✓ Fit the weight plate and steel cover of electric Iron on the Iron base with screws
  - ✓ Fix the thermostat needle and insulated handle on top of the steel cover of electric Iron
  - ✓ Connect the neon light and power cable as per circuit diagram of electric Iron
  - ✓ Carryout the current leakage, short circuit and short to earth test of electric Iron with ohm meter and test lamp
  - ✓ Test electric Iron temperature with selector switch to check electric Iron performance
- Carry out installation of UPS and batteries
  - ✓ Select the proper place for installation of UPS
  - ✓ Install the wiring for UPS installation according to wiring layout (given by assessor)
  - ✓ Install the light plug and connect with wiring for UPS installation
  - ✓ Check the AC supply of light plug with multi-meter or test lamp for UPS installation
  - ✓ Install the UPS and batteries near the light plug
  - ✓ Connect the positive and negative brass clamps on battery terminals polarity wise for UPS installation
  - ✓ Connect the power cable of UPS in light plug according to phase for UPS installation
  - ✓ Connect the output plug shoe in the UPS output according to phase for UPS installation
  - ✓ Check the main AC supply input and output from UPS for UPS installation
  - ✓ Check the function of inverter of UPS supply for UPS installation
  - ✓ Check the charging current of battery for UPS installation
- Carry out installation of ceiling fan
  - ✓ Install the switch board supply of ceiling fan for the installation of ceiling fan
  - ✓ Lay down the PVC pipe /duct for wiring and install wires for the installation of ceiling fan
  - ✓ Connect the wires with main supply and switch board for the installation of ceiling fan
  - ✓ Install the ceiling rose for connection for the installation of ceiling fan
  - ✓ Check the current leakage of ceiling fan with series test board for the installation of ceiling fan
  - ✓ Install the blades with body of ceiling fan for the installation of ceiling fan
  - ✓ Hang the ceiling fan with iron hook of roof for the installation of ceiling fan
  - ✓ Connect the cable of ceiling fan with ceiling rose for the installation of ceiling fan
  - ✓ Check the test run of ceiling fan with ON/OFF switch after the installation of ceiling fan
- Carry out installation of main domestic electric distribution board
  - ✓ Interpret circuit diagram (given by assessor) of main electric distribution board for the installation of main domestic electric distribution board
  - ✓ Install volt and ampere meters at main electric distribution board for the installation of main domestic electric distribution board
  - ✓ Install lamp indicators at main electric distribution board for the installation of main domestic electric distribution board
  - ✓ Install change-over switch at main electric distribution board for the installation of main domestic electric distribution board
  - ✓ Install earth leakage breaker and circuit breakers for the installation of main domestic electric distribution board

	<ul style="list-style-type: none"> <li>✓ Perform connections of main electric distribution for the installation of main domestic electric distribution board</li> <li>✓ Perform test run of main electric distribution board with test lamp after the installation of main domestic electric distribution board</li> <li>✓ Fix the cover of circuit breakers of main electric distribution board after the installation of main domestic electric distribution board</li> <li>• General Performance Criteria <ul style="list-style-type: none"> <li>✓ Follow precautionary procedures as per requirements of the given tasks</li> <li>✓ Select, use and maintain equipment/ tools as per requirement of the task</li> <li>✓ Report to supervisor in case of any emergency after taking necessary actions</li> <li>✓ Complete the work by following sequence of the operations</li> <li>✓ Perform task(s) within standard timeframe</li> </ul> </li> </ul>
<b>2. Other requirements</b>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>3. Answer any questions your assessor may have during the practical assessment</b>	My answers to questions are correct and demonstrate my understanding of the topics and their application.

# 3

## ASSESSOR JUDGEMENT GUIDE

Candidate's Name ..... Father's Name.....

### INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
<b>1. Complete practical task of Electrical Equipment Installation and Repair under observation by an assessor</b>	During a practical assessment, under observation by an assessor, the candidate correctly carried out the following tasks:			
Carry out preventive maintenance of single phase electrical induction motor	Checked the main electric supply line voltage for the preventive maintenance of single phase electrical induction motor			
	Checked and repair/replace the ON/OFF switch of single phase electrical induction motor			
	Tested the continuity of single phase electrical induction motor with ohm meter			
	Tested the insulation of single phase electrical induction motor with Meggar			
	Checked and repaired/replaced the faulty cables of single phase electrical induction motor.			
	Checked the short circuit (winding short circuit or short to body) of single phase electrical induction motor with test lamp.			
	Checked input voltage and current of single phase electrical induction motor with multi-meter			
	Checked and repaired/replaced the electric circuit breaker of single phase electrical induction motor from electrical distribution panel			
	Checked and fixed the foundation of single phase electrical induction motor			
	Checked RPM of single phase electrical induction motor with tachometer.			
Carry out corrective maintenance of electric iron	Checked the temperature selector switch of electric iron manually for corrective maintenance			
	Removed the name plate from insulated handle of electric iron for corrective maintenance			
	Connected electric iron with series test board for corrective maintenance			
	Checked the minimum and maximum temperature of electric iron through selector switch for corrective maintenance			
	Adjusted the thermostat of electric iron through temperature adjuster to set the bimetallic strip for corrective maintenance			
	Checked the minimum and maximum temperature of electric iron through selector switch and observe tripping temperature after corrective maintenance			
	Fixed name plate on insulated handle of electric iron after corrective maintenance			
Test and repair/replace the electrical and electronics components of pedestal fan	Checked and repaired/replaced power cable and selector switch of pedestal fan by performing continuity test with ohm meter			
	Checked and replaced the capacitor of pedestal fan by performing capacitance test with capacitance meter			
	Checked the starting and running electric windings of pedestal fan with test lamp/ohm meter			

Carry out assembling of electrical juicer machine	Interpreted circuit diagram/layout of electrical juicer machine (given by assessor)			
	Assembled electric motor of electrical juicer machine with armature, field poles, side covers, brass bush and carbon brushes			
	Performed continuity and current leakage test of electrical juicer machine with ohm meter/test lamp for assembling			
	Fit the electric motor in the body of the electrical juicer machine for assembling			
	Fit the rubber coupling on the top of Armature shaft for the assembling of electrical juicer machine			
	Fit the control penal inside the body for the assembling of electrical juicer machine			
	Connected the power cable and motor assembly with control penal as per circuit diagram for the assembling of electrical juicer machine			
	Fit the bottom cover with body for the assembling of electrical juicer machine			
	Performed test run of juicer machine after the assembling			
Carry out assembling of electrical Iron	Checked the current leakage and continuity of electric iron element with ohm meter/ test lamp			
	Installed the element of electric iron on iron base with rubber hammer			
	Installed the thermostat switch and bi-metallic strip in the base of electric Iron			
	Fit the weight plate and steel cover of electric Iron on the Iron base with screws			
	Fixed the thermostat needle and insulated handle on top of the steel cover of electric Iron			
	Connected the neon light and power cable as per circuit diagram of electric Iron			
	Carried out the current leakage, short circuit and short to earth test of electric Iron with ohm meter and test lamp			
	Tested electric Iron temperature with selector switch to check electric Iron performance			
Carry out installation of UPS and batteries	Selected the proper place for installation of UPS			
	Installed the wiring for UPS installation according to wiring layout (given by assessor)			
	Installed the light plug and connected with wiring for UPS installation			
	Checked the AC supply of light plug with multi-meter or test lamp for UPS installation			
	Installed the UPS and batteries near the light plug			
	Connected the positive and negative brass clamps on battery terminals polarity wise for UPS installation			
	Connected the power cable of UPS in light plug according to phase for UPS installation			
	Connected the output plug shoe in the UPS output according to phase for UPS installation			
	Checked the main AC supply input and output from UPS for UPS installation			
	Checked the function of inverter of UPS supply for UPS installation			
	Checked the charging current of battery for UPS installation			
Carry out installation of ceiling fan	Installed the switch board supply of ceiling fan for the installation of ceiling fan			
	Laid down the PVC pipe /duct for wiring and installed wires for the installation of ceiling fan			
	Connected the wires with main supply and switch board for the installation of ceiling fan			



	Installed the ceiling rose for connection for the installation of ceiling fan			
	Checked the current leakage of ceiling fan with series test board for the installation of ceiling fan			
	Installed the blades with body of ceiling fan for the installation of ceiling fan			
	Hanged the ceiling fan with iron hook of roof for the installation of ceiling fan			
	Connected the cable of ceiling fan with ceiling rose for the installation of ceiling fan			
	Checked the test run of ceiling fan with ON/OFF switch after the installation of ceiling fan			
Carry out installation of main domestic electric distribution board	Interpreted circuit diagram (given by assessor) of main electric distribution board for the installation of main domestic electric distribution board			
	Installed volt and ampere meters at main electric distribution board for the installation of main domestic electric distribution board			
	Installed lamp indicators at main electric distribution board for the installation of main domestic electric distribution board			
	Installed change-over switch at main electric distribution board for the installation of main domestic electric distribution board			
	Installed earth leakage breaker and circuit breakers for the installation of main domestic electric distribution board			
	Performed connections of main electric distribution for the installation of main domestic electric distribution board			
	Performed test run of main electric distribution board with test lamp after the installation of main domestic electric distribution board			
	Fixed the cover of circuit breakers of main electric distribution board after the installation of main domestic electric distribution board			
General Performance Criteria	Followed precautionary procedures as per requirements of the given tasks			
	Selected, used and maintained equipment/ tools as per requirement of the task			
	Reported to supervisor in case of any emergency after taking necessary actions			
	Completed the work by following sequence of the operations			
	Performed task(s) within standard timeframe			
<b>2. Other requirements</b>	N/A			

**3. Answer any questions the assessor may have during the practical assessment**

Candidate's answers to questions are correct and demonstrate understanding of the topics and their application.

Assessor to document below all questions asked and candidate answers. Use extra sheets if required and attach.

# 4

## LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

<b>INSTRUCTIONS</b>	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> <li>Context of the assessment</li> <li>List of required tools and equipment.</li> <li>List of consumable items required during the service</li> </ul>
<b>1. Context of Assessment</b>	This task will be performed in <b>real time</b> environment.

<b>2. List of tools and equipment required (for five candidates)</b>		
S. No	Items	Quantity
1	Brooms	5
2	Dustpans and brushes	5
3	Lint free cleaning cloth	5
4	Vacuum cleaner	5
5	Dusters	5
6	Hangers	5
7	Floor mops	5
8	Cleaning rags	5
9	Dust mops	5
10	Squeegees	5
11	Bed set( bed, side table, dressing table)	1
12	Carpet	1
13	Rugs	1
14	Bed linen set ( pillows, sheet, cushions)	1 set
15	Towels	1 set
16	Curtains	1 set
17	Wardrobes	1 set
18	Cob Webbers	5
19	Gloves	5 sets

<b>3. List of consumable items required (for five candidates)</b>		
S. No	Items	Quantity
1	Cleaning detergents	5 bottles
2	Toilet caddies	5 sets
3	Liquid detergents	5 bottles
4	Cleaning solutions ( bleach and acids)	5 bottles each
5	Toilet disinfectants	5 bottles / 5 bars
6	Toilet bowl swabs	5
7	Sanitizing agents	5 bottles
8	Air freshener	5 bottles
9	Surface cleaners ( mirror/ glass)	5 bottles
10	Furniture polish/ furniture shiner spray	5 bottles
11	All-purpose detergent	5 bottles
12	Toilet rolls	5 rolls
13	Drain solvents	5 bottles
14	Carpet Stain remover	5 bottles
15	Dustbin liners	1 pack


## National Vocational and Technical Training Commission (NAVTTTC)

 5th Floor Evacuee Trust Complex Sector F-5/1, Islamabad.

 +92 51 9044 04

 +92 51 9044 04

 [info@navttc.org](mailto:info@navttc.org)

 [www.navttc.org](http://www.navttc.org)