

# **Competency Based Training & Assessment (CBT&A) Methodology**

## **EVIDENCE DOCUMENTS**

**Submitted To**

**Bangladesh Technical Education Board (BTEB)**

**For**

**Fulfillment of Certificate - IV in CBT& A (Methodology)**

**Submitted by**



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## Evidence 1: Hazard Inspection Report

### Risk Levels

**High= H:** Could result in accidental death

**Medium= M:** Could result in injury

**Low= L:** Could result in staff or trainee discomfort

Contact Information	
<b>Name of people undertaking for inspection</b>	BASHIR AHAMMED
<b>Date of Inspection</b>	02/09/2022
<b>OSH coordinator</b>	MIZANUR RAHMAN
<b>Manager responsible</b>	MD. ATIKUR RAHMAN

Floors	No Risk	Risk	Risk Level	Details	Who is responsible for corrective action? Name of manager
Even surface – no holes, protruding nails	√				
Loose boards nailed down	√				
Dropped objects picked up	√				
Dust and rubbish		√	L	Dust and rubbish are not cleaned regularly which may create physical hazards	Mizanur Rahman Md. Atikur Rahman
Stock material out of way	√				
Floor are around machines clear	√				
Power cables on floor.		√	L	Power cables are not well systematically.	Mizanur Rahman Md. Atikur Rahman
Machines	No Risk	Risk	Risk Level	Details	Who is responsible for corrective action? Name of manager
Adequate space between machinery	√				
Provision to store waste materials	√				
Safety guards in place	√				
Starting and stopping devices within reach of the operator	√				
Power connection in good order		√	L	Power connection is not good	Mizanur Rahman Md. Atikur Rahman
Cleanliness	√				
Noise level	√				
Lighting		√	L	Light is not sufficient	Mizanur Rahman Md. Atikur Rahman
Fire	No Risk	Risk	Risk Level	Details	Who is responsible for corrective action? Name of manager
Extinguishers in place, recently serviced and clearly marked for type of fire	√				
Adequate direction notices for fire exits		√	L	There is no adequate direction notices for the fire exits.	Mizanur Rahman Md. Atikur Rahman
Exit doors easily opened from inside		√	H	Should be repair the fire exit door for easily opening	Mizanur Rahman Md. Atikur Rahman
Exits clear of obstructions	√				
Fire alarm system functioning correctly	√				
Fire instructions available and displayed	√				
Ladders/staircases are clear	√				
Fire blanket/s available	√				

Ladders and steps	No Risk	Risk	Risk Level	Details	Who is responsible for corrective action? Name of manager
Stored in proper place		✓	M	Ladder is not stored in proper place. Any time ladder can fall & can be reason of accident. It should be replaced.	Mizanur Rahman Md. Atikur Rahman
No broken or missing rungs or other deflects	✓				
Storage areas	No Risk	Risk	Risk Level	Details	Who is responsible for corrective action? Name of manager
Storage area designed to minimize lifting problems	✓				
Materials stored in racks and bins wherever possible	✓				
Shelves free of dust and rubbish		✓	L	It can be more better if it clean everyday	Mizanur Rahman Md. Atikur Rahman
Electrical	No Risk	Risk	Risk Level	Details	Who is responsible for corrective action? Name of manager
Plugs, sockets or switches in good condition		✓	L	Plugs are not in good condition. It needs to repair.	Mizanur Rahman Md. Atikur Rahman
No frayed or deflective leads	✓				
Portable power tools in good condition	✓				
No temporary leads on floors	✓				
Isolating transformers	✓				
No strained leads	✓				
Staff amenities	No Risk	Risk	Risk Level	Details	Who is responsible for corrective action? Name of manager
Washrooms clean and supplied with soap and water for hand washing	✓				
Toilets clean		✓	L	Toilet is not cleaned properly and which may cause biological hazard.	Mizanur Rahman Md. Atikur Rahman
Meal rooms clean and tidy	✓				
First aid	No Risk	Risk	Risk Level	Details	Who is responsible for corrective action? Name of manager
Cabinets and contents clean and orderly	✓				
Cabinet stocked appropriately	✓				
Emergency numbers displayed		✓	L	No Emergency number is displayed. Which cause physical hazard.	Mizanur Rahman Md. Atikur Rahman
Rubbish	No Risk	Risk	Risk Level	Details	Who is responsible for corrective action? Name of manager
Bins located at suitable points around facility		✓	L	Bins are not at the proper place. It's should replace right place	Mizanur Rahman Md. Atikur Rahman
Bins emptied regularly	✓				
Oily rags and combustible refuse placed in covered metal containers	✓				

#### Comment

The environment of the workplace should be cleaned and systematic. The workplace should be modified suitably within 05/09/2022.

Manager name: Md. Atikur Rahman

## Evidence 2: Maintenance and Housekeeping Checklist for training workshop

1	LAYOUT	Y	N	NA	Actions: (include person responsible and target completion date)
1.1	Area is tidy and well kept	√			
1.2	Adequate storage area provided	√			
1.3	Floor is free of obstructions and not-slippery	√			
1.4	Any opening in the floor are guarded or covered	√			
1.5	Walkways clearly marked and guarded if necessary		√		Action: Walkways are needed to be marked accurately. Responsible person: OSH coordinator Mizanur Rahman Within 01-09-2022
2	ENVIRONMENT	Y	N	NA	Actions: (include person responsible and target completion date)
2.1	Lighting is adequate		√		Action: It is not enough. There has to arrange sufficient electric light Within 02-09-2022. Responsible person: OSH coordinator Mizanur Rahman
2.2	Lighting covers and fittings are secure	√			
2.3	Area is free from odors	√			
2.4	Noise level is acceptable/adequately controlled	√			
2.5	Ventilation is adequate	√			
2.6	Recycling posters and information displayed	√			
3	EMERGENCY PROCEDURES	Y	N	NA	Actions: (include person responsible and target completion date)
3.1	Written procedures posted	√			
3.2	Extinguisher of appropriate type easily accessible	√			
3.3	Emergency and hazard signage is clearly visible		√		Action: signage must be clearly visible Within 01-09-2022. Responsible person: OSH coordinator Mizanur Rahman
4	FIRST AID FACILITIES	Y	N	NA	Actions: (include person responsible and target completion date)
4.1	Kit kept and marked in accessible area.	√			
4.2	Kit is stocked and contents are in-date	√			
5	GENERAL FACILITIES	Y	N	NA	Actions: (include person responsible and target completion date)
5.1	Cleaning area is accessible and functional	√			

6	ELECTRICAL SAFETY	Y	N	NA	Comments / Hazards	Actions: (include person responsible and target completion date)
6.1	Power extension boards / Multi-plugs in good condition	√				
6.2	Power leads are off the floor or covered and placed away from walkways	√				
6.3	Faulty equipment is removed from service		√		There are two or more faulty equipment in this shop.	Action: Those equipment will be replaced or maintenance Within 04-09-2022 Responsible person: OSH coordinator Mizanur Rahman
7	WASTE DISPOSAL	Y	N	NA	Comments / Hazards	Actions: (include person responsible and target completion date)
7.1	Waste containers are provided and labeled	√				
7.2	Waste is segregated and stored appropriately away from drains	√				
8	PPE	Y	N	NA	Comments / Hazards	Actions: (include person responsible and target completion date)
8.1	Required PPE available for all staff and trainees		√		Need to manage adequate PPE for everyone	Action: Must be buy PPE Within 02-09-2022 Responsible person: OSH coordinator Mizanur Rahman
8.2	Correctly stored	√				
8.3	Well maintained and in good condition	√				
8.4	Signage of PPE requirements displayed	√				

Comment :

The Lab will be workable if above mentioned action to take proper steps checklist within 05 September 2022.

Manager Name: Md. Atikur Rahman

### Evidence 3: Task Analysis Form

Name of Unit of Competency: Service and repair Refrigerators & Deep Freezers			
Name of Task: Perform Test Relay of a refrigerator			
Elements	Knowledge	Skills	Attitude
1. Prepare for Repairing	<ul style="list-style-type: none"> <li>• Safe work practices</li> <li>• personal proactive equipment (PPE) <ul style="list-style-type: none"> <li>○ Hand gloves</li> <li>○ Safety Shoes</li> <li>○ Apron</li> <li>○ helmet</li> </ul> </li> <li>• Work instructions</li> <li>• Tools and equipment <ul style="list-style-type: none"> <li>○ Pliers</li> <li>○ Screwdriver</li> <li>○ Hacksaw</li> <li>○ Wrenches</li> <li>○ Wire stripper/crimper</li> <li>○ Swaging tools,</li> <li>○ Flaring tools</li> <li>○ Hammer</li> <li>○ Steel wire brush</li> <li>○ Tube cutter</li> <li>○ Tube bender</li> <li>○ Reamer</li> <li>○ Gas welding equipment</li> <li>○ Multimeter</li> <li>○ Leak detector</li> <li>○ Materials</li> <li>○ Charging station</li> <li>○ Weight scale</li> <li>○ Two stage vacuum pump</li> <li>○ Dry nitrogen cylinder with two stage regulator</li> <li>○ Digital temperature meter</li> </ul> </li> <li>• Repairing instruments</li> <li>• materials</li> </ul>	<ul style="list-style-type: none"> <li>• Observe Safe work practices and wear personal proactive equipment (PPE as required for the work to be performed.</li> <li>• Interpret work instructions to determine job requirements</li> <li>• Selected necessary Tools and equipment in accordance with job requirements</li> <li>• Calibrated Repairing instruments as per work requirement</li> <li>• Select Necessary materials as per job requirement.</li> </ul>	<ul style="list-style-type: none"> <li>• Commitment to occupational health and safety</li> <li>• Environmental concerns</li> <li>• Environmental concerns</li> <li>• Eagerness to learn</li> <li>• Tidiness and timeliness</li> <li>• Respect for rights of peers and seniors in workplace</li> </ul>

2. Check and Test refrigerators, deep freezers	<ul style="list-style-type: none"> <li>Refrigerators &amp; deep freezers</li> <li>All components, of the electrical / electronic circuit <ul style="list-style-type: none"> <li>Compressor motor</li> <li>Overload protector</li> <li>Starting relays</li> <li>Thermostat</li> <li>Low and high Pressure cutout</li> <li>Heaters</li> <li>Defrosting system components</li> <li>Timers and other related electrical components found in refrigeration electrical systems.</li> </ul> </li> <li>Body ,cabinet and mounts</li> <li>leaks testing</li> </ul>	<ul style="list-style-type: none"> <li>Check Refrigerators &amp; deep freezers to identify fault according to standard procedures.</li> <li>Check All components, of the electrical / electronic circuit according to standard procedures</li> <li>Check Body ,cabinet and mounts and restored to the required condition</li> <li>Perform leaks testing to identify leakage of the unit as per standard procedure.</li> </ul>	<ul style="list-style-type: none"> <li>Commitment to occupational health and safety</li> <li>Environmental concerns</li> <li>Environmental concerns</li> <li>Eagerness to learn</li> <li>Tidiness and timeliness</li> <li>Respect for rights of peers and seniors in workplace</li> </ul>
3. Repair refrigerators, deep freezers	<ul style="list-style-type: none"> <li>System</li> <li>Gas</li> <li>Door heaters, thermostat, door gasket checked</li> <li>Unit operated and checked <ul style="list-style-type: none"> <li>Insulation</li> <li>Resistance</li> <li>Mechanical</li> <li>Continuity</li> <li>Timing Sequence</li> <li>Leak</li> <li>The pressures in the refrigerator and deep freezer circuit</li> <li>The temperature at specified places, including ambient</li> <li>Temperature.</li> <li>Current drawn while running.</li> <li>Current drawn on starting</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Evacuate System using vacuum pump, recovered refrigerant stored in recovery unit.</li> <li>Charge Gas by weight using specified equipment according to specifications</li> <li>Checked and serviced / replaced Door heaters, thermostat, door gasket where necessary, to ensure proper functioning</li> <li>Checked, cleaned and ensured Interior cooler space dust / debris free</li> <li>Operate and check Unit to ensure satisfactory performance according to manufactures specifications</li> </ul>	<ul style="list-style-type: none"> <li>Commitment to occupational health and safety</li> <li>Environmental concerns</li> <li>Environmental concerns</li> <li>Eagerness to learn</li> <li>Tidiness and timeliness</li> <li>Respect for rights of peers and seniors in workplace</li> </ul>
4. Clean and store tools and equipment	<ul style="list-style-type: none"> <li>Tools and equipment</li> <li>Clean and store tools and equipment</li> <li>Work place</li> </ul>	<ul style="list-style-type: none"> <li>Maintained Tools and equipment and cleaned as per instruction manual</li> <li>Clean and store tools and equipment</li> <li>Cleaned Work place in accordance with environmental requirement</li> <li>Stored Tools and equipment safely in appropriate location according to standard workshop procedures</li> </ul>	<ul style="list-style-type: none"> <li>Commitment to occupational health and safety</li> <li>Environmental concerns</li> <li>Environmental concerns</li> <li>Eagerness to learn</li> <li>Tidiness and timeliness</li> <li>Respect for rights of peers and seniors in workplace</li> </ul>



**Evidence 4:**  
**Unit delivery plan**

<b>Unit Title : Service and repair Refrigerators &amp; Deep Freezers</b>	<b>Unit code: TRARAC1013A1</b>	<b>NTVQ Level :1</b>	<b>Nominal hours: 50 hrs</b>
<b>Name of Trainer: Bashir Ahammed</b>	<b>Number of Trainees enrolled :10</b>	<b>Proposed Start Date: 01/08/2022</b>	

<b>Session Number</b>	<b>Time</b>	<b>Elements covered</b>	<b>Performance criteria covered</b>	<b>Delivery mode/strategy</b>	<b>Equipment and Resources required</b>
01	1 hr	1. Prepare for Repairing 2. Clean and store tools and equipment	1.1,1.2 ,1.3 ,1.4, 1.5 4.1,4.2,4.3	<ul style="list-style-type: none"> <li>• Off the Job</li> <li>• Presentation</li> <li>• Discussion</li> <li>• Demonstration</li> <li>• Practical Session</li> </ul>	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Laptop</li> <li>➤ Multimedia Projector</li> <li>➤ Sound System</li> <li>➤ Flip Chart</li> <li>➤ White Board</li> <li>➤ Relay</li> <li>➤ OLP</li> <li>➤ AVO Meter etc.</li> </ul>
02	1 hr	1. Prepare for Repairing 2. Check and Test refrigerators, deep freezers 3. Clean and store tools and equipment	1.1,1.2 ,1.3 ,1.4, 1.5 2.1, 2.2 4.1,4.2,4.3	<ul style="list-style-type: none"> <li>• Off the Job</li> <li>• Presentation</li> <li>• Discussion</li> <li>• Demonstration</li> <li>• Practical Session</li> </ul>	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Laptop</li> <li>➤ Multimedia Projector</li> <li>➤ Sound System</li> <li>➤ Flip Chart</li> <li>➤ White Board</li> <li>➤ Relay</li> <li>➤ OLP</li> <li>➤ AVO Meter etc.</li> </ul>
03	1 hr	1. Prepare for Repairing 2. Check and Test refrigerators, deep freezers 3. Clean and store tools and equipment	1,1.2 ,1.3 ,1.4, 1.5 2.1, 2.2 4.1,4.2,4.3	<ul style="list-style-type: none"> <li>• Off the Job</li> <li>• Presentation</li> <li>• Discussion</li> <li>• Demonstration</li> <li>• Practical Session</li> </ul>	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Laptop</li> <li>➤ Multimedia Projector</li> <li>➤ Sound System</li> <li>➤ Flip Chart</li> <li>➤ White Board</li> <li>➤ Relay</li> <li>➤ OLP</li> <li>➤ AVO Meter etc.</li> </ul>

## Evidence 5A: Training Session Plan-1

<b>Unit of competency : Service and repair Refrigerators &amp; Deep Freezers</b>	<b>Unit code:TRARAC1013A1</b>	<b>NTVQF Level-1</b>	<b>Session No: 01</b>
<b>Task:</b> Test Overload Protector of a Refrigerator according to industry standard.			
<b>Learning Outcome/s:</b> At the end of the session the learner will be able to Test Overload Protector of a Refrigerator with 10 minutes as per industry standard.			
<b>Relevant Performance Criteria:</b> 1.1 Safe work practices observed and personal proactive equipment (PPE) is worn as required for the work to be performed. 1.2 Work instructions are interpreted to determine job requirements 1.3 Necessary Tools and equipment are selected in accordance with job requirements 1.4 Repairing instruments are calibrated as per work requirement 1.5 Necessary materials are selected as per job requirement. 2.1 Refrigerators & deep freezers are checked to identify fault according to standard procedures. 2.2 All components, of the electrical / electronic circuit are checked according to standard procedures 4.1 Tools and equipment are maintained and cleaned as per instruction manual 4.2 Work place is cleaned in accordance with environmental requirement 4.3 Tools and equipment are stored safely in appropriate location according to standard workshop procedures			
<b>Date: 08/09/2022</b>	<b>Session Duration: 1 Hour</b>	<b>Trainer: Bashir Ahammed</b>	

Learning Segment And Approximate Time Required	Key Points & Activities	Training Method	Materials, Equipment's & Resources
<b>Introduction 5 min</b>	<ul style="list-style-type: none"> <li>➤ <b>Get attention-</b> Good morning everybody, How are you? Ice breaking – short story, jokes.</li> <li>➤ <b>Link with previous Session :</b> <ol style="list-style-type: none"> <li>1. OSH practises</li> <li>2. Function of Overload Protector</li> </ol> </li> <li>➤ <b>Today's Outcome of session</b> At the end of the session the learner will be able to Test Overload Protector of a Refrigerator with 10 minutes as per industry standard.</li> <li>➤ <b>Structure of session</b> <ul style="list-style-type: none"> <li>Discussion</li> <li>Demonstration</li> <li>Practice</li> </ul> </li> <li>➤ <b>Stimulate motivation</b> <ul style="list-style-type: none"> <li>Career opportunity</li> <li>Social status</li> </ul> </li> <li>➤ <b>Safety issue (OSH Practice)</b></li> </ul>	<p>Discussion Demonstration Practice</p>	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Handout etc.</li> </ul>
<b>Discussion and Demonstration 30 min</b>	<p><b>Key points to discuss</b></p> <ol style="list-style-type: none"> <li>1. PPE</li> <li>2. Hazard <ol style="list-style-type: none"> <li>1. Electrical components of Refrigerators &amp; deep freezers Such as Overload Protector</li> </ol> </li> <li>3. Demonstration: During demonstration Test Overload Protector to used Repair a Refrigerators &amp; deep freezers. according to Industry standard</li> </ol>	<p>Discussion Demonstration Practice</p>	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Multimedia Projector</li> <li>➤ Relay, OLP</li> <li>➤ AVO Meter</li> <li>➤ Refrigeration Tools</li> <li>➤ Refrigerators &amp; deep freezers etc.</li> </ul>
<b>Trainee Practice 15 min</b>	Observe the performance of the trainees & provide informative feedback.	<p>Discussion Demonstration Practice</p>	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Multimedia Projector</li> <li>➤ OLP, Relay</li> <li>➤ AVO Meter</li> <li>➤ Refrigeration Tools</li> <li>➤ Refrigerators &amp; deep freezers etc.</li> </ul>
<b>Session Review and feedback 5 min</b>	<p>Asking question for review on:</p> <ol style="list-style-type: none"> <li>1. What is OLP?</li> <li>2. How to used AVO meter?</li> <li>3. What is PPE?</li> </ol>	<p>Discussion Oral questioning</p>	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Multimedia Projector</li> <li>➤ Smart board etc.</li> </ul>
<b>Link to next session 5 min</b>	In the next session you will learn how to test Relay of Refrigeration	Discussion	<ul style="list-style-type: none"> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Multimedia Projector</li> <li>➤ Smart board etc.</li> </ul>
<b>Special notes: N/A</b>			

## Evidence 5B: Training Session Plan-2

Unit of competency : Service and repair Refrigerators & Deep Freezers	Unit code:TRARAC1013A1	NTVQF Level-1	Session No: 02
<b>Task: Perform test Relay of a Refrigerator</b> according to industry standard.			
<b>Learning Outcome/s:</b> At the end of the session the learner will be able to Perform test Relay of a Refrigerator with 10 minutes as per industry standard.			
<b>Relevant Performance Criteria:</b> 1.1 Safe work practices observed and personal proactive equipment (PPE) is worn as required for the work to be performed. 1.2 Work instructions are interpreted to determine job requirements 1.3 Necessary Tools and equipment are selected in accordance with job requirements 1.4 Repairing instruments are calibrated as per work requirement 1.5 Necessary materials are selected as per job requirement. 2.1 Refrigerators & deep freezers are checked to identify fault according to standard procedures. 2.2 All components, of the electrical / electronic circuit are checked according to standard procedures 4.1 Tools and equipment are maintained and cleaned as per instruction manual 4.2 Work place is cleaned in accordance with environmental requirement 4.3 Tools and equipment are stored safely in appropriate location according to standard workshop procedures			
Date: 10/09/2022	Session Duration: 1 Hour	Trainer: Bashir Ahammed	

Learning Segment And Approximate Time Required	Key Points & Activities	Training Method	Materials, Equipment's & Resources
<b>Introduction 5 min</b>	<ul style="list-style-type: none"> <li>➤ <b>Get attention-</b> Good morning everybody, How are you? Ice breaking – short story, jokes.</li> <li>➤ <b>Link with previous Session :</b> <ol style="list-style-type: none"> <li>1. What is PPE?</li> <li>2. What are the types of Tools?</li> </ol> </li> <li>➤ <b>Today's Outcome of session</b> At the end of the session the learner will be able to Perform test Relay of a Refrigerator with 10 minutes as per industry standard.</li> <li>➤ <b>Structure of session</b> Discussion Demonstration Practice</li> <li>➤ <b>Stimulate motivation</b> Career opportunity Social status</li> <li>➤ <b>Safety issue</b> (OSH Practice)</li> </ul>	<p>Discussion Demonstration Practice</p>	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Compressor</li> <li>➤ Relay</li> <li>➤ AVO Meter etc.</li> </ul>
<b>Discussion and Demonstration 30 min</b>	<p><b>Key points to discuss</b></p> <ol style="list-style-type: none"> <li>2. About Compressor of Refrigerators &amp; deep freezers.</li> <li>3. Electrical components of Refrigerators &amp; deep freezers Such as Relay</li> </ol> <p><b>Demonstration:</b> During demonstration Test relay of Refrigeration to Industry standard</p>	<p>Discussion Demonstration Practice</p>	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Multimedia Projector</li> <li>➤ Compressor</li> <li>➤ Relay</li> <li>➤ AVO Meter etc.</li> </ul>
<b>Trainee Practice 15 min</b>	Observe the performance of the trainees & provide informative feedback.	<p>Discussion Demonstration Practice</p>	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Multimedia Projector</li> <li>➤ Compressor</li> <li>➤ Relay</li> <li>➤ AVO Meter etc.</li> </ul>
<b>Session Review and feedback 5 min</b>	<p>Asking question for review on:</p> <ol style="list-style-type: none"> <li>1. What is Relay?</li> <li>2. How to Test Relay?</li> <li>3. Describe Function of Relay.</li> </ol>	<p>Discussion Oral questioning</p>	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Multimedia Projector</li> <li>➤ Compressor</li> <li>➤ Relay</li> <li>➤ AVO Meter etc.</li> </ul>
<b>Link to next session 5 min</b>	In the next session you will learn how to Test Thermostat switch of Refrigerators	Discussion	<ul style="list-style-type: none"> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Multimedia Projector etc.</li> </ul>
<b>Special notes: N/A</b>			

## Evidence 5C: Training Session Plan-3

<b>Unit of competency : Service and repair Refrigerators &amp; Deep Freezers</b>	<b>Unit code:TRARAC1013A1</b>	<b>NTVQF Level-1</b>	<b>Session No: 03</b>
<b>Task: Perform Test Thermostat of Refrigerators</b> according to industry standard.			
<b>Learning Outcome/s:</b> At the end of the session the learner will be able to Perform test Thermostat of a Refrigerator with 10 minutes as per industry standard.			
<p><b>Relevant Performance Criteria:</b></p> <ul style="list-style-type: none"> <li>1.1 Safe work practices observed and personal proactive equipment (PPE) is worn as required for the work to be performed.</li> <li>1.2 Work instructions are interpreted to determine job requirements</li> <li>1.3 Necessary Tools and equipment are selected in accordance with job requirements</li> <li>1.4 Repairing instruments are calibrated as per work requirement</li> <li>1.5 Necessary materials are selected as per job requirement.</li> <li>2.1 Refrigerators &amp; deep freezers are checked to identify fault according to standard procedures.</li> <li>2.2 All components, of the electrical / electronic circuit are checked according to standard procedures</li> <li>3.5 Unit operated and checked to ensure satisfactory performance according to manufactures specifications</li> <li>4.1 Tools and equipment are maintained and cleaned as per instruction manual</li> <li>4.2 Work place is cleaned in accordance with environmental requirement</li> <li>4.3 Tools and equipment are stored safely in appropriate location according to standard workshop procedures</li> </ul>			
<b>Date: 11/09/2022</b>	<b>Session Duration: 1 Hour</b>		<b>Trainer: Bashir Ahammed</b>

Learning Segment And Approximate Time Required	Key Points & Activities	Training Method	Materials, Equipment's & Resources
<b>Introduction</b> 5 min	<ul style="list-style-type: none"> <li>➤ <b>Get attention-</b> Good morning everybody, How are you? Ice breaking – short story, jokes.</li> <li>➤ <b>Link to the Previous session :</b> <ol style="list-style-type: none"> <li>1. What are the types of Relay?</li> <li>2. How can test Relay?</li> </ol> </li> <li>➤ <b>Today's Outcome of the session</b> At the end of the session the learner will be able to Perform test Thermostat of a Refrigerator with 10 minutes as per industry standard.</li> <li>➤ <b>Structure of session</b> <ul style="list-style-type: none"> <li>Discussion</li> <li>Demonstration</li> <li>Practice &amp; Review</li> </ul> </li> <li>➤ <b>Stimulate motivation</b> <ul style="list-style-type: none"> <li>Career opportunity</li> <li>Social status</li> </ul> </li> <li>➤ <b>Safety issue</b> (OSH Practice)</li> </ul>	Discussion Demonstration Practice	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Thermostat switch</li> <li>➤ AVO Meter etc.</li> </ul>
<b>Discussion and Demonstration</b> 30 min	<p><b>Key points to discuss</b></p> <ol style="list-style-type: none"> <li>1. About Service and repair Refrigerators &amp; deep Freezers.</li> <li>2. Electrical &amp; electronics components of Refrigerators &amp; deep freezers</li> </ol> <p><b>Demonstration:</b> During demonstration Identify terminal of Thermostat switch according to Industry standard</p>	Discussion Demonstration Practice	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Multimedia Projector</li> <li>➤ Thermostat switch</li> <li>➤ AVO Meter etc.</li> </ul>
<b>Trainee Practice</b> 15 min	Observe the performance of the trainees & provide informative feedback.	Small group Discussion Demonstration Practice	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Multimedia Projector</li> <li>➤ Smart board</li> <li>➤ Thermostat switch</li> <li>➤ AVO Meter etc.</li> </ul>
<b>Session Review and feedback</b> 5 min	<p>Asking question for review on:</p> <ol style="list-style-type: none"> <li>1. What is Thermostat?</li> <li>2. How can Test Thermostat switch terminal?</li> <li>3. What is the Function of Thermostat switch?</li> </ol>	Discussion Demonstration Oral questioning	<ul style="list-style-type: none"> <li>➤ PPE (Apron, Safety Shoes, etc)</li> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Multimedia Projector</li> <li>➤ Smart board etc.</li> </ul>
<b>Link to next session</b> 5 min	In the next session you will learn how to Leak test in Refrigeration & deep freezers.	Discussion Demonstration Practice	<ul style="list-style-type: none"> <li>➤ CBLM</li> <li>➤ Handout</li> <li>➤ Multimedia Projector</li> <li>➤ Smart board etc.</li> </ul>
<b>Special notes: N/A</b>			

**Evidence No-6:**  
**Competency Based Learning Materials)**  
(CBLM's)

**NTVQF Level-1**  
**Refrigeration and Air-Conditioning, Level-I**  
**For**  
**Transport Equipment Sector**

**Service and repair Refrigerators & Deep Freezers**





# Information Sheet

**Unit of competency: Service and repair Refrigerators & Deep Freezers**  
**Unit code:TRARAC1013A1**

**Task:** Perform test Relay of Refrigerator according to Industry standard.

## **Personal Protective Equipment (PPE):**

PPE means Personal Protective Equipment. Before doing a job everyone should wear appropriate PPE. In this job we have to wear safety helmet, apron, safety gloves, mask, and safety shoe. The following is a description of some of the important PPE.

**Apron:** It is a one kind of safety cloth which protect our body from dust and rubbish.



**Helmet:** Helmet is a safety devise that protect our head from falling objects, Hit from overhead unexpected obstruction.



**Safety Shoe:** It's protecting our lag from electrical shock, Nail, falling substance, Martials &equipment's etc.



**Hand Gloves:** Hand gloves are a safety device that protect our hand from physical hazards.



**Safety Goggles:** It's protects our eyes from dust, harmful fluids external hit.



**Face mask:** It's Protects from any biological hazard.



## Introduction:

**Definition of Relay:** Relay is an Electronic safety device which helps compressor of Refrigerator to start .

The relay is the device that opens or closes the contacts to cause the operation of the other electric control. It detects the intolerable or undesirable condition with an assigned area and gives the commands to the circuit breaker to disconnect the affected area. Thus protects the system from damage.

A faulty Relay can damage a Compressor or can also cause a Short circuit in wiring.

## Different type of Relay used in Refrigerator:

1. PTC Relay
2. Current Coil Relays

### PTC Relay

PTC means positive temperature coefficient. A **PTC relay** is a starting device that is used when the refrigerator compressor motor starts.

A refrigerator with a faulty PTC relay cannot start or continuously clicks on and off unable to start.

### How do you test a PTC relay?

Put the probes of a multimeter on the left and right prongs of the compressor. Locate the 3 prongs that the PTC relay plugs into on the side of your compressor. Put one probe on the prong that's furthest to the left and the other probe on the prong on the right to take a resistance reading.



**Fig: Test relay of Refrigeration with Digital multimeter**

## **JOB SHEET**

<b>UoC</b>	<b>Service and repair Refrigerators &amp; Deep Freezers</b>	<b>NTVQF Level</b>	<b>1</b>
<b>Qualification</b>	<b>Level-1</b>		
<b>Job Title</b>	<b>Perform Test Relay of Refrigerator</b>	<b>Time</b>	<b>1 Hour</b>



**Fig: Test Relay with Digital Multimeter**

### **Working Procedures:-**

Step 1: Follow OSH

Step 2: Wear PPE

Step 3: Collect Tools, Equipment's & Materials

Step 4: Continuity test of Relay

Step 5: Connect checked using AVO meter

Step 6: Connect the AVO meter Probe with starting Relay

Step 7: Clean the workplace & restore the materials at safe place

# Specification Sheet

<b>UoC</b>	Service and repair Refrigerators & Deep Freezers	<b>NTVQF Level-1</b>
<b>Job Title</b>	Perform Test Relay of Refrigerator.	

## **Specific Instructions:**

1. Measure relay using Digital multimeter..
2. Set the digital multimeter in  $\times 10 \Omega$  range.
3. Identify relay terminal by multimeter.
4. Identify resistance multimeter.
5. Set the digital multimeter in ohm range.
6. Measure relay terminal by digital multimeter.
7. Identify resistance, using digital multimeter.



To complete the above task you will need to following equipment per Trainee.

## **List of Required PPE**

S/N	Name	Quantity
01	Hand Gloves	2
02	Apron.	2
03	Shoes.	2
04	Musk	2
05	Protective Goggles	2

## **List of Required Tools and equipment**

S/N	Name	Quantity
01	Analogue Multimeter	2
02	Digital Multimeter	2

## **List of Required Materials**

S/N	Name	Quantity
01	Current Coil Relay	2
02	Potential Relay	2

Others Parameter (If Necessary):

## Evidence No-7:

### Peer Feedback on Training and Assessment Activity

Name of trainee assessor: Bashir Ahammed.		Comments/feedback
Name of peer assessor: Md. Rezaul Karim.		
Session plan	<p><b>Learning outcome statements</b></p> <ul style="list-style-type: none"><li>▪ Were written using active verb</li><li>▪ Can be measured</li><li>▪ Were realistic for the time allocated</li></ul> <p><b>Performance criteria</b></p> <ul style="list-style-type: none"><li>▪ Performance measured against given standard</li></ul> <p><b>Structure</b></p> <ul style="list-style-type: none"><li>▪ Learner activities/practice planned</li><li>▪ Training aids listed</li><li>▪ OSH issues covered where required</li></ul>	Yes, active verb is used Yes, measureable Yes realistic  yes, PC is measured against CS  Yes, Planned Yes, Listed Yes, Covered
Training Delivery	<ul style="list-style-type: none"><li>▪ OSH issues discussed with trainees as appropriate and managed</li><li>▪ Appropriate learning methods were used</li><li>▪ Learning aids assisted learning</li><li>▪ Practice activities were effectively conducted</li><li>▪ Review of key topics done</li><li>▪ Appropriate time management demonstrated during the session</li><li>▪ Theory and practice were integrated</li></ul>	Yes, discussed and managed Yes, used appropriate method Yes, it is assisted Yes, conducted Yes, reviewed Yes Yes, integrated
Feedback to trainee	<ul style="list-style-type: none"><li>▪ Helpful feedback on performance was provided to trainee</li></ul>	yes, feedback on performance was provided
Evidence guide	<ul style="list-style-type: none"><li>▪ The assessment methods chosen by the trainee trainer were suitable for collecting the evidence required to confirm competence</li><li>▪ 2 appropriate evidence guides (assessment tools/instruments) are provided</li><li>▪ Questions appropriate to PC were asked</li><li>▪ Observation checklist matched PC</li></ul>	Yes collected Yes, Provided Yes, asked Yes, matched

## Evidence No-8:

### Personal Evaluation Form for Trainer

Trainer's Name: Bashir Ahammed

Date: 10/09/2022

The purpose of this form is to guide you to self-evaluate your training session.

Question	Comments
1. How did you make your session introduction informative?	I made my session introduction about the topics related to competency standard so that I can tell that my introduction was informative.
2. How did you make your session plan clear and useful?	I made my session plan according to CBT&A standard method/format. So that I can tell that it is universal. So naturally it is clear and useful.
3. How could you improve your session planning in the future?	I could add more technological update in my session plan that will perfect my session.
4. What improvements do you need to make to your activities to make them more effective?	I could add more effective and informative intelligence to make more effective my activities.
5. How did you cater for a variety of learning styles?	I can use more teaching method to make variety of learning styles.
6. How did you make your instructional and demonstrational skills effective?	I can use more universal and standard teaching method and I'll improve my knowledge, skill and attitude for sharpening my instructional and demonstration skills.
7. What did you do to motivate your learners?	I think real life success story is the best method for motivation, so I prefer that for best motivation of learners.
8. What was the best feature of your presentation?	In my presentation I focus about real workplace information. I think that is the best thing.
9. How did you ensure your support materials were appropriate?	If my support materials can comply with the present industrial workplace job then I can ensure that is appropriate.
10. How did you structure the practice opportunity?	I'll prefer the practice until he/she competent with competency standard.
11. What did you do to ensure the environment was safe and supportive for your learners?	I will make a well-equipped standard CBT&A workshop, which ensures the effective learning environment.
12. Explain why you think that the feedback you gave to your learners was effective	I gave feedback to my learners about their need and required topic that was standardized with industrial need. So I can say that is more effective to my learners.
13. How did you know that your learners achieved the stated learning outcomes?	I only assured about the learning outcomes, when I can see the actual learning outcomes he/she achieved is effective and measurable and compacted with industrial need.

Question	Comments
14. How did you know your learner was ready for assessment?	When I saw that my learners are doing their standard performance criteria effectively then I can assure about their assessment process.
15. How did you conclude your session?	I conclude my session with review the present session and giving some primary information about next session.

The best part of my training was to make convert a human resource into human capital to starting a great industrial revolution.

Next time, I will take more preparation to make me perfect for teaching to my learners.

I'd like to learn more about the new upcoming technology and teaching technique.



**Evidence No-9**  
**Professional Skills Development Planner-Top Sheet**  
 (For Trainer)

<b>Name:</b> Bashir Ahammed. <b>Position:</b> Chief Instructor( RAC) <span style="float: right;"><b>Age:</b> 36</span> <b>Technology:</b> Refrigeration and Air Conditioning <b>Institute:</b> Pabna Polytechnic Institute, Pabna <b>Contact Number:</b> 01722845953 <b>Email:</b> <a href="mailto:engr.bashir34@gmail.com">engr.bashir34@gmail.com</a>
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Competencies to be developed in 2023			
Competency	Learning strategy and location	Resources required	Timeframe
Develop facilitation skill	Off the job Technical Teachers Training College	Approval by Principal	January - March 2023
Develop presentation skill	Off the job Technical Teachers Training College	Approval by Principal	July-September 2023

<b>Mentor name:</b> Abdul Bari  <b>Signature</b>	<b>Position:</b> Chief Instructor  <b>Date:</b> 01/07/2022
<b>Approved by Principal/Supervisor :</b> Md. Atikur Rahman <b>Position:</b> Principal <b>Signature</b> <b>Date:</b> 01/08/2022	

## Professional Development Plan - Details

### Competencies to be developed in 2022

Competency	Performance criteria	Certified by
TVTTAS501A1 Conduct Training Need Analysis (TNA)	<p>1.1 Client objectives and expectations and organizational requirements of clients are identified and verified through discussion.</p> <p>1.2 Resources are identified and verified according to organizational requirements.</p> <p>2.1 Reliable and appropriate methods for collecting information and data on current, emerging and future training needs of the industry are applied.</p> <p>2.2 Work to determine skills and competencies required for effective performance is analyzed.</p> <p>2.3 Information and data to determine current skills/competency profile of staff according to organizational /ethical requirements is gathered.</p> <p>2.4 Information is analyzed using reliable and valid data analysis methods to determine skills competency match and relevant training needs.</p> <p>2.5 Findings are supported on organizational training needs with verifiable evidence, where appropriate.</p> <p>3.1 Clients are provided with clear advice and recommendations including options on meeting training and assessment needs.</p> <p>3.2 Feedback and comments are obtained on suitability and sufficiency of advice.</p> <p>3.3 Recommendations are recorded and applied in future planning if required.</p> <p>3.4 Final report is completed and presented to the client for approval.</p>	BTEB
TVTDES501A1 Design and develop competency based training program.	<p>1.1 Scope, purpose and type of learning program are clarified with key stakeholders.</p> <p>1.2 The competency standards and/or relevant training specifications are accessed and confirmed on which to base the learning program.</p> <p>1.3 The learning environment, operational resources and learner characteristics required to develop the learning program are Identified and considered.</p> <p>2.1. Agreed specific content considering scope and purpose are developed and documented with respect to the learning principles</p> <p>2.2. Learning content is broken into manageable chunks/segments and sequences and timeframe is documented for each segment or learning session.</p> <p>2.3. Delivery strategies and required assessment methods and instruments for the learning program are determined and confirmed.</p> <p>2.4. Completed learning program is documented in line with organizational and national qualifications requirements.</p> <p>3.1. Drafts of learning programs and contents are reviewed with key stakeholders, where appropriate.</p> <p>3.2. The draft learning program and content are adjusted to reflect the review outcomes, where appropriate.</p> <p>3.3. Final approval for the learning program, structure and content are obtained from appropriate personnel.</p>	BTEB

## Evidence No 10

### Technical Competency Development Plan -Summary (For Trainer)

**Name:** Bashir Ahammed.

**Position:** Chief Instructor ( RAC)

**Age:** 36

**Technology:** Refrigeration and Air Conditioning

**Institute:** Pabna Polytechnic Institute, Pabna

**Contact Number:** 01722845953

**Email:** [engr.bashir34@gmail.com](mailto:engr.bashir34@gmail.com)

#### Year competencies will be developed 2023

Competency	NTVQFL	Strategy	Name of the Training Center/Industry	Cost to be incurred	Time frame
GN2004A2: Use English in the workplace	Level - 2	Off the job	TTTC, Dhaka	20,000/-	January - March 2023
TRARAC1004A2: Service and Repair Window and Split Type Air-conditioners	Level - 2	Off the job	TTTC, Dhaka	20,000/-	July-September 2023
TRARAC1006A2: Install of Window and Split Type Air-conditioners	Level - 2	Off the job	TTTC, Dhaka	20,000/-	October-December 2023

Approved by Principal/ Supervisor: Md.Atikur Rahman

Signature:

Date: 01/07/2022

Approved by Agency:

Designation:

Date:

## Technical Competency Development Plan – Details

### Competencies to be developed – 2022

Competency	NTVQFL	Element	Performance criteria
GN2004A2: Use English in the workplace	L2	1.Practice to Prepare Simple Sentence 2.Read and interpret Work place Document in English 3.Write Simple Routine Workplace Document in English 4.Listen Conversation in English	1.1 Common Vocabulary is identified Usually Used in the Workplace. 1.2 Spelling and Correct Punctuation of the identified Vocabulary are Checked and learn. 1.3Correct Sentence are formed and Practice in Written and spieled orally. 2.1Work Place Documents are Collected 2.2Work Place Document are Read and Interpreted 2.3Visual Information interpreted in English 3.1Simple Routine Workplace Documents are Prepared Using Key Words , Phrase, Simple Sentence and Visual Aids Where Appropriate 3.2Key Information is Written in the appropriate Place in Standard forms. 4.1 Way of active listening is interpreted. 4.2 Conversation text is interpreted/ Written Correctly after active listening. 4.3 Attention to the Speaker is Create / Communicated Through non-verbal means. 4.4 Appropriate response and feedback are provided in English.
TRARAC1004A2: Service and Repair Window and Split Type Air-conditioners	L2	1. Prepare unit, tools and workplace. 2.Check and identify defects 3.Repair window type &split type Air Conditioners 4. Clean and store of tools and equipment	1.1 Safe work practices are observed and personal proactive equipment ( <i>PPE</i> ) is worn as required for the work to be performed. 1.2 Work instructions are interpreted to determine job requirements 1.3 Necessary <i>Tools and equipment</i> are selected in accordance with job requirements 1.4 Measuring and Repairing instruments are calibrated as per work requirement 1.5 Necessary <i>materials</i> are selected as per job requirement. 2.1 Systematic <i>pre-testing procedure</i> is observed in accordance with manufacturer's instructions. 2.2 All components of the Air-flow system checked according to manufactures specifications to ensure correct performance 2.3 System pressure tested with dry nitrogen using specified equipment following safety procedures. 2.4 Motor terminals are checked using specified testing procedures 2.5 Control settings checked in conformity with service- manual specifications. 2.6 All <i>components</i> of refrigeration and <i>electrical / electronic circuit</i> are checked according to standard procedures 2.7 System defects/fault symptoms era identified and document educing 3.1 appropriate tools and equipment Defective parts/ <i>components</i> are replaced with identical or recommended appropriate equivalent ratings 3.2 Control settings/adjustments are perform deacon format with service- manual specifications 3.3 System is evacuated using vacuum pump and recovered refrigerant stored in recovery unit according to manufacturer's specifications 3.4 Gas is recharged using specified type of gas by recharging equipment to required specification

			following safety practices 3.5 Cleaning of unit is performed in accordance with standard procedures 3.6 Unit is operated and <i>checked</i> to ensure satisfactory performance according to manufactures specifications 3.7 Report on repair is prepared in line with enterprise procedures 4.1 Tools and equipment are maintained and cleaned as per instruction manual 4.2 Work place is cleaned in accordance with environmental requirement 4.3 Tools and equipment are stored safely in appropriate location according to standard workshop procedures.
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## Certification

This is to certify that Bashir Ahammed Chief Instructor(Tech/ RAC) Pabna Polytechnic Institute achieved competencies on the following unit's

Name of the industry Person:	Organization: TTTC, Dhaka
Designation:	Signature with Date

## Evidence No-11

### Assessment planning matrix

<b>Qualification</b>	RAC, NTVQF Level-1				
<b>Unit code and title</b>	TRARAC1013A1 Service and repair Refrigerators & Deep Freezers				
<b>Unit descriptor</b>	This unit covers the knowledge, skill and attitude required to repair refrigerators, Deep Freezers using specified tools, testing & measuring instruments				
<b>Assessment process</b>	<b>W</b>	<b>D</b>	<b>O</b>	<b>P</b>	<b>T</b>
	<b>Written questions</b>	<b>Demonstration</b>	<b>Oral questions</b>	<b>Portfolio (Sample product / or document)</b>	<b>Third Party Report</b>

<b>Unit code</b>	<b>Elements/Performance criteria</b>	<b>W</b>	<b>D</b>	<b>O</b>	<b>P</b>	<b>T</b>
<b>TRARAC1013A1</b>	<b>1. Prepare for Repairing</b>	<b>3</b>				
	1.1 Safe work practices observed and personal proactive equipment (PPE) is worn as required for the work to be performed.		√			
	1.2 Work instructions are interpreted to determine job requirements		√			
	1.3 Necessary Tools and equipment are selected in accordance with	√				
	1.4 Repairing instruments are calibrated as per work requirement			√		
	1.5 Necessary materials are selected as per job requirement.	√				
	<b>2. Check and Test refrigerators, deep freezers</b>	<b>3</b>				
	2.1 Refrigerators & deep freezers are checked to identify fault according to standard procedures condition			√		
	2.2 All components, of the electrical / electronic circuit are checked according to standard procedures	√				

Unit code	Elements/Performance criteria	W	D	O	P	T
	2.3 Body ,cabinet and mounts are checked and restored to the required		√			
	2.4 Leaks testing is performed to identity leakage of the unit as per standard procedure			√		
	<b>3.Repair refrigerators, deep freezers</b>	<b>3</b>				
	3.1 System is evacuated using vacuum pump, recovered refrigerant stored in recovery unit.	√				
	3.2 Gas is charged by weight using specified equipment according to Specifications		√			
	3.3 Door heaters, thermostat, door gasket checked and serviced replaced where necessary, to ensure proper functioning			√		
	3.4 Interior cooler space checked, cleaned and ensured dust / debris free		√			
	3.5 Unit operated and checked to ensure satisfactory performance according to manufactures specifications		√			
	<b>4.Clean and store tools and equipment</b>	<b>2</b>				
	4.1 Tools and equipment are maintained and cleaned as per instruction manual	√	√			
	4.2 Work place is cleaned in accordance with environmental requirement		√			
	4.3 Tools and equipment are stored safely in appropriate location according to standard workshop procedures		√			

**Evidence No-12**  
**SELF-ASSESSMENT SHEET**

<b>Qualification:</b>	<b>NSC Level -1 in Refrigeration &amp; Air Conditioning, Transport Equipment Sector.</b>	
<b>Unit of competency</b>	TRARAC1013A1 Service and repair Refrigerators & Deep Freezers.	
<b>Instruction:</b> <ul style="list-style-type: none"> <li>Read each of the questions in the left-hand column of the chart.</li> <li>Place a check in the appropriate box opposite each question to indicate your answer.</li> </ul> <b>Can I?</b>		
<b>Performance Criteria all</b>	<b>YES</b>	<b>NO</b>
<b>1. Prepare for Repairing</b>		
1.1 Safe work practices observed and personal proactive equipment (PPE) is worn as required for the work to be performed. job requirements	√	<input type="checkbox"/>
1.2 Work instructions are interpreted to determine job requirements	√	<input type="checkbox"/>
1.3 Necessary Tools and equipment are selected in accordance with	√	<input type="checkbox"/>
1.4 Repairing instruments are calibrated as per work requirement	√	<input type="checkbox"/>
1.5 Necessary materials are selected as per job requirement.	√	<input type="checkbox"/>
<b>2. Check and Test refrigerators, deep freezers</b>		
2.1 Refrigerators & deep freezers are checked to identify fault according to standard procedures condition	√	<input type="checkbox"/>
2.2 All components, of the electrical / electronic circuit are checked according to standard procedures	√	<input type="checkbox"/>
2.3 Body ,cabinet and mounts are checked and restored to the required	√	<input type="checkbox"/>
2.4 leaks testing is performed to identity leakage of the unit as per standard procedure	√	<input type="checkbox"/>
<b>3.Repair refrigerators, deep freezers</b>		
3.1 System is evacuated using vacuum pump, recovered refrigerant Stored in recovery unit.	√	<input type="checkbox"/>
3.2 Gas is charged by weight using specified equipment according to Specifications	√	<input type="checkbox"/>
3.3 Door heaters, thermostat, door gasket checked and serviced / replaced where necessary, to ensure proper functioning	√	<input type="checkbox"/>
3.4 Interior cooler space checked, cleaned and ensured dust / debris free	√	<input type="checkbox"/>
3.5 Unit operated and checked to ensure satisfactory performance according to manufactures specifications	√	<input type="checkbox"/>
<b>4.Clean and store tools and equipment</b>		
4.1 Tools and equipment are maintained and cleaned as per instruction manual	√	<input type="checkbox"/>
4.2 Work place is cleaned in accordance with environmental requirement	√	<input type="checkbox"/>
4.3 Tools and equipment are stored safely in appropriate location according to standard workshop procedures	√	<input type="checkbox"/>
I agree to undertake assessment in the knowledge that information gathered will only be used for professional development purposes and can only be accessed by concerned assessment personnel and my manager/supervisor.		
<b>Candidate's name &amp; signature:</b>	Md. Rezaul Karim	<b>Date: 10-09-2022</b>



# Evidence No-13

## Bangladesh Technical Education Board, Dhaka

Institute Name: TTTC, Tejgaon, Dhaka.  
 NSC Level: Level I  
 CBT & A: N / A  
 Assessment Type: Regular / Re-Assessment  
 Candidate Type: RPL

### Attendance Sheet with Registration No.

Date: 10.09. 2022  
 Number of Candidate: 10  
 Occupation: RAC  
 Batch: 08

SL	Code Number	Candidate Name	Father's Name	Registration No.	Signature	Result	Remarks (If NYC)
						(C / NYC)	
1	RAC 26275	Md. Rezaul Karim	Abdur Rashid	18125232821000010			
2							
3							
4							
5							
Assessor's / Assessors' Signature						Date:	10-09-2022
Board Representative's Name & Signature						Date:	10-09-2022

## Evidence No-14

### COMPETENCY ASSESSMENT AGREEMENT

<b>Candidate's Name:</b>	Md. Rezaul Karim		
<b>Assessor's Name:</b>	Bashir Ahammed		
<b>Qualification</b>	NTVQF Level-1		
<b>Qualification/Units of Competency to be Assessed</b>	<b>NSC Level -1 in Refrigeration &amp; Air Conditioning, Transport Equipment Sector.</b>		
<b>Candidate to answer the question:</b>		<b>Yes</b>	<b>No</b>
<input type="checkbox"/> Have the context and purpose of assessment been explained		√	
<input type="checkbox"/> Have the qualification and units of competency been explained?		√	
<input type="checkbox"/> Have the Project-Based Assessment been explained?		√	
<input type="checkbox"/> Do you understand the assessment procedure and evidence to be collected?		√	
<input type="checkbox"/> Have your rights and appeal system been explained?		√	
<input type="checkbox"/> Have you discussed any special needs to be considered during assessment?		√	
I agree to undertake assessment in the knowledge that information gathered will only be used for professional development purposes and can only be accessed by concerned personnel and my manager/supervisor.			
Candidate's Signature:		Date: 10-09-2022	
Assessor Signature:		Date: 10-09-2022	

**Evidence No-15**  
**WRITTEN QUESTION**

<b>Qualification</b>	<b>NSC Level -1 in Refrigeration &amp; Air Conditioning, Transport Equipment Sector.</b>	
<b>Candidate's Name</b>	Md. Rezaul Karim	
<b>Assessor Name</b>	Bashir Ahammed	
<b>Assessment Centre</b>	TTTC, Tejgaon, Dhaka.	
<b>Date of assessment</b>	10-09-2022	
Q1. Write down the name of PPE to be used Check the Continuity of Relay.		
Q2. Write the name of different kind of Relay?		
Q 3. Which Relay is use in Refrigerator?		
Q 4. What is Housekeeping?		
The candidate's underpinning knowledge was: Satisfactory <input checked="" type="checkbox"/> Not Satisfactory <input type="checkbox"/>		
Feedback to candidate		
<b>Candidate's Signature</b>		<b>Date:</b>
<b>Assessor Signature</b>		<b>Date:</b>

# **Answer of Written Question**

**Qualification:** NSC Level -1 in Refrigeration & Air Conditioning, Transport Equipment Sector.

**Date of assessment:** 10/09/2022

- 1. Ans:** Ans. Safety Helmet, Hand gloves, Apron, Goggles, Safety Shoes, Mask.
- 2. Ans:** The name of different kind of Relay are Current coil Relay, PTC Relay, Hot wire Relay, Bimetallic Relay, Potential Relay etc.
- 3. Ans:** Current coil Relay and PTC Relay are use in Refrigerator.
- 4. Ans:** Housekeeping is simple words means maintaining a house on daily or long term basis or looking after its cleanliness, tidiness, upkeep and smoothing running.

**Evidence No-16**  
**JOB SHEET**

<b>UoC</b>	<b>Service and repair Refrigerators &amp; Deep Freezers</b>	<b>NTVQF Level</b>	<b>1</b>
<b>Qualification</b>	<b>Level-1</b>		
<b>Job Title</b>	<b>Perform Test Relay of Refrigerator</b>	<b>Time</b>	<b>1 Hour</b>

**Procedure/Steps:-**



**Procedures/ Steps:**

Step 1: Follow OSH

Step 2: Wear PPE

Step 3: Collect Tools, Equipment's & Materials

Step 4: Continuity test of Relay

Step 5: Connect checked using AVO meter

Step 6: Connect the AVO meter Probe with starting Relay contact Point

Step 7: Clean the workplace & restore the materials at safe place.

# Specification Sheet

<b>UoC</b>	Service and repair Refrigerators & Deep Freezers	<b>NTVQF Level-1</b>
<b>Job Title</b>	Perform Test Relay of Refrigerator.	

## Specific Instructions:

1. Measure relay using Digital multimeter..
2. Set the digital multimeter in  $\times 10 \Omega$  range.
3. Identify relay terminal by multimeter.
4. Identify resistance multimeter.
5. Set the digital multimeter in ohm range.
6. Measure relay terminal by digital multimeter.
7. Identify resistance, using digital multimeter.



To complete the above task you will need to following equipment per Trainee.

## List of Required PPE

S/N	Name	Quantity
01	Hand Gloves	2
02	Apron.	2
03	Shoes.	2
04	Musk	2
05	Protective Goggles	2

## List of Required Tools and equipment

S/N	Name	Quantity
01	Analogue Multimeter	2
02	Digital Multimeter	2

## List of Required Materials

S/N	Name	Quantity
01	Current Coil Relay	2
02	Potential Relay	2

Others Parameter (If Necessary):

**Evidence No- 17**  
**OBSERVATION /DEMONSTRATION CHECK LIST & REPORT**

<b>Candidate name:</b>	Md. Rezaul Karim		
<b>Assessor name:</b>	Bashir Ahammed		
<b>Assessment Centre</b>	TTTC, Tejgaon, Dhaka.		
<b>Qualification &amp; Level:</b>	NSC Level -1 in Refrigeration & Air Conditioning, Transport Equipment Sector		
<b>Date of assessment:</b>	10-09-2022		
Assessment Centre	TTTC , Dhaka.		
For Project/Job -1			
<b>Instructions for demonstration:</b>			
Please read the different “Job Sheets”. Refer to the “specific instructions (for the candidate)” When you are preparing the different documents, worksheets and other requirement for this assessment.			
<b>Job Name:</b> Perform Test Relay of Refrigerator.			
<b>During the demonstration of skills, did the candidate:</b>	Please check (✓) to show if evidence is demonstrated		
	<b>Yes</b>	<b>No</b>	<b>N/A</b>
Safe work practices observed and personal proactive equipment (PPE) is worn as required for the work to be performed.	✓		
Work instructions are interpreted to determine job requirements	✓		
Body ,cabinet and mounts are checked and restored to the required	✓		
Gas is charged by weight using specified equipment according to Specifications	✓		
Interior cooler space checked, cleaned and ensured dust / debris free	✓		
Unit operated and checked to ensure satisfactory performance according to manufactures specifications	✓		
Tools and equipment are maintained and cleaned as per instruction manual	✓		
Work place is cleaned in accordance with environmental requirement	✓		
Tools and equipment are stored safely in appropriate location according to standard workshop procedures	✓		
The candidate’s overall performances was: Satisfactory <input checked="" type="checkbox"/> Not Satisfactory <input type="checkbox"/>			
<b>Feedback to candidate:</b>			
Candidate Signature :	Date:10-09-2022		
Assessor Signature :	Date:10-09-2022		

## Evidence No- 18

### Oral Questioning Checklist

<b>Candidate's Name:</b>	Md. Rezaul Karim		
<b>Assessor Name:</b>	Bashir Ahammed		
<b>Assessment Centre:</b>	TTTC, Tejgaon, Dhaka.		
<b>Qualification &amp; Level:</b>	NSC Level -1 in Refrigeration & Air Conditioning, Transport Equipment Sector		
<b>Instructions for the assessor:</b>			
<ul style="list-style-type: none"> <li>Check for the satisfactory answer of the candidate during the conduct of oral questioning</li> <li>Place a tick in the yes box if the candidate answered the oral questions correctly and no box if the candidate does not answer the oral questioning correctly</li> </ul>			
<b>Date of assessment</b>		10.09.2022	
<b>Location of the assessment activity</b>		TTTC, Dhaka.	
SL No.	List of Questions	Satisfactory Response	
		Yes	No
1.	Write down the name of PPE.	√	<input type="checkbox"/>
2.	Which type Relay is use in Refrigerator?	√	<input type="checkbox"/>
3.	Which device is used to test the Relay?	√	<input type="checkbox"/>
4.	What is the function of Thermostat?	√	<input type="checkbox"/>
<b>The candidate's underpinning knowledge was:</b> Satisfactory <input checked="" type="checkbox"/> Not Satisfactory <input type="checkbox"/>			
<b>Feedback to Candidate:</b> All Performance is good.			
<b>The candidate's overall performance was:</b> Satisfactory <input checked="" type="checkbox"/> Not Satisfactory <input type="checkbox"/>			
<b>Candidate signature:</b> Md. Rezaul Karim		<b>Date:</b> 10-09-2022	
<b>Assessor signature:</b> Bashir Ahammed		<b>Date:</b> 10-09-2022	



## Oral Questioning answer sheet

**Qualification:** NSC Level -1 in Refrigeration & Air Conditioning, Transport Equipment Sector.

**Date of assessment:** 10/09/2022

<b>Question 1 Answer</b>	Personal Protection Equipment are Apron, Hand Gloves, Protective Goggles, Safety Shoes, Face Mask etc.
<b>Question 2 Answer</b>	Relay test by AVO Meter.
<b>Question 3 Answer</b>	PTC Relay and Current coil Relay are use in Refrigerator.
<b>Question 4 Answer</b>	A Thermostat is a regulating device or system that heats or cools to a set point temperature.

## Evidence No: 19

### Competency Assessment Results Summary (CARS)

COMPETENCY ASSESSMENT RESULTS SUMMARY (CARS)			
Name of Candidate:	Md. Rezaul Karim		
Name of Assessor:	Bashir Ahammed		
Title of Qualification/ Cluster of Units of Competency	NSC Level -1 in Refrigeration & Air Conditioning, Transport Equipment Sector.		
Assessment Centre:	TTTC, Dhaka	Date of Assessment:	10-09-2022
The performance of the candidate in the following unit(s) of competency and corresponding assessment methods			
Assessment Event	Satisfactory	Not Satisfactory	
Event-1: Written	√		
Event-2: Demonstration√			
Event-3: Oral	√		
Note: Satisfactory Performance shall only be given to candidate who demonstrated successfully all the competencies identified in the above-named Qualification/Cluster of Units of Competency.			
Recommendation:	For issuance of √NC/SoA (Indicate title/s of SoA, if Full Qualification is not met)	<input type="checkbox"/> For submission of Additional documents Specify:	Specify: <input type="checkbox"/> For re-assessment (pls. specify)
Did the candidate overall performance meet the required evidences/ standards?		√ <input type="checkbox"/> Yes	<input type="checkbox"/> No
OVERALL EVALUATION	√ <input type="checkbox"/> <b>Competent</b>	<input type="checkbox"/> <b>Not Yet Competent</b>	
General Comments [Strengths/Improvements needed]			
Signature of Candidate		Date:	10-09-2022
Signature of Assessor		Date:	10-09-2022
Signature of Centre Manager		Date:	10-09-2022

#### CANDIDATE'S COPY (Please present this form when you claim your NC/SoA)

COMPETENCY ASSESSMENT RESULTS SUMMARY (CARS)			
Qualification: NSC Level -1 in Refrigeration & Air Conditioning, Transport Equipment Sector.			
Name of Candidate:	Md. Rezaul Karim	Date of Issue:	10-09-2022
Name of Assessment Centre:	TTTC, Dhaka	Date of Assessment:	10-09-2022
Assessment Results:	√ <input type="checkbox"/> <b>COMPETENT</b>	<input type="checkbox"/> <b>NOT YET COMPETENT</b>	
Recommendation:	For issuance of √NC/SoA (Indicate title/s of SoA, if Full Qualification is not met)	<input type="checkbox"/> For submission of Additional documents Specify:	Specify: <input type="checkbox"/> For re-assessment (pls. specify)
Name and Signature:	Assessed by Bashir Ahammed		Attested by
Date: 10-09-2022			

**Evidence No-20:**  
**Evidence Requirement for CBT & A Methodology**  
 (For Trainers & Assessors)

<b>Name of the Trainee:</b>	Bashir Ahammed
<b>Registration ID</b>	18125232821000002
<b>Instruction:</b> Please check the correct box before submitting the assessment evidence to your assessor	

**Plan and Deliver Competency Based Training – evidence documents**

SI No	Required evidence	Submitted	
		YES	NO
1	Completed Hazard Inspection Checklist	√ <input type="checkbox"/>	<input type="checkbox"/>
2	Completed Maintenance and Housekeeping Form	√ <input type="checkbox"/>	<input type="checkbox"/>
3	Completed Task Analysis From	√ <input type="checkbox"/>	<input type="checkbox"/>
4	Completed Unit Delivery Plan	√ <input type="checkbox"/>	<input type="checkbox"/>
5	Completed Session Plans for 3 training sessions	√ <input type="checkbox"/>	<input type="checkbox"/>
6	Relevant CBLMS for the session to be conducted	√ <input type="checkbox"/>	<input type="checkbox"/>
7	Completed Peer Feedback Form	√ <input type="checkbox"/>	<input type="checkbox"/>
8	Completed Personnel Evaluation Form	√ <input type="checkbox"/>	<input type="checkbox"/>
9	Developed Personal Professional Development Plan	√ <input type="checkbox"/>	<input type="checkbox"/>
10	Developed Technical Competency Development Plan	√ <input type="checkbox"/>	<input type="checkbox"/>

**Plan and conduct assessment – evidence documents**

SI No	Required evidence	Submitted	
		YES	NO
1	Completed Assessment Planning Matrix	√ <input type="checkbox"/>	<input type="checkbox"/>
2	Self-Assessment for unit being assessed	√ <input type="checkbox"/>	<input type="checkbox"/>
3	Attendance sheet with Registration No.	√ <input type="checkbox"/>	<input type="checkbox"/>
4	Competency Assessment Agreement Sheet	√ <input type="checkbox"/>	<input type="checkbox"/>
5	Job Sheet and Specification Sheet	√ <input type="checkbox"/>	<input type="checkbox"/>
6	<b>Relevant assessment tools</b>		
	Observation/Demonstration Checklist	√ <input type="checkbox"/>	<input type="checkbox"/>
	Oral Questioning Checklist (With Answer Key)	√ <input type="checkbox"/>	<input type="checkbox"/>
	Written question (With Answer Key)	√ <input type="checkbox"/>	<input type="checkbox"/>
7	Competency Assessment Result Summery (CARS)	√ <input type="checkbox"/>	<input type="checkbox"/>

I have submitted the above documents.  
 Trainee Signature:

Date: 10-09-2022