

Points earned											
Total possible points (15)											

II. Demonstrate basic refrigeration skills to NATE Refrigeration – Light Commercial – Installation/Service Knowledge
Areas of Technician Expertise for Installation and Service standards and to manufacturer’s specifications.

Tasks Instructions:

	1	2	3	4	5	6	7	8	9	10
Describe the refrigeration cycle and refrigerant circuits										
Evacuate a refrigeration system										
Pump down a refrigeration system										
Recover refrigerant from system using self contained recovery equipment										
Calculate the maximum capacity of a refrigerant cylinder										
Demonstrate the correct refrigerant cylinder handling procedures										
Explain thermostatic expansion valve operation										
Explain fixed orifice operation										
Take a superheat measurement										
Demonstrate leak checking during evacuation										
Demonstrate leak checking of a charged system										
Charge a refrigeration system following manufacturer’s charging procedure										
Utilize a pressure/temperature chart to identify refrigerant type										
<i>Safety and infection control are adhered to during all aspects of this task</i>										
<i>The student completed task within the time limited</i>										
Points earned										
Total possible points (15)										

III. Demonstrate electric knowledge and skills necessary for HVACR situations to NATE Core.

Tasks Instructions:

	1	2	3	4	5	6	7	8	9	10
Explain the interaction of voltage, resistance, and current flow										
Describe how transformers change voltage										
Explain the importance of grounding electrical circuits										
Describe the components of an electrical circuit including switches, loads, and connectors										
Define the function of the following elements of an electric circuit; resistors, capacitors, contactors, motors, relays, fuses, circuit breakers, time delays, and timers										
Interpret basic pictorial, schematic, and ladder diagrams and explain their uses										
Interpret electrical symbols										
Identify individual circuits within a diagram provided										
Demonstrate the proper use of a multi-meter test instrument										
Demonstrate the proper places within the circuit to measure electricity										
Interpret and explain meter readings in relationship to a reported problem										
<i>Safety and infection control are adhered to during all aspects of this task.</i>										
<i>The student completed task within the time limited.</i>										
Points earned										
Total possible points (13)										
IV. Install, diagnose and service HVACR controls and control components to NATE Core.										
<u>Tasks Instructions:</u>										
	1	2	3	4	5	6	7	8	9	10

Explain the function of each component																				
Demonstrate test and adjustment procedure																				
Troubleshoot and service various electrical capacitors, relays, contractors, motors, controls, heaters, and transformers																				
Describe the function and test procedure for each component																				
Demonstrate gas leak checking procedure																				
Check line pressure, manifold pressure and firing rate																				
Explain the principles of gas venting																				
Explain the effects of altitude on furnace operation, and steps needed during setup to compensate																				
Check and adjust electric heat section in coil blower																				
Explain the operation of electric heat elements, electric heat sequences, limits, fusible links and other safety devices																				
Check voltage and amperage draw of electric elements																				
Service blower in a forced-air system																				
Explain operation of blower including: correct rotation, blower housing and cutoff plate																				
Describe the relationship between system static pressure, air flow, and temperature rise																				
Clean and inspect a heating system																				
Measure airflow or air handling system																				
<i>Safety and infection control are adhered to during all aspects of this task.</i>																				
<i>The student completed task within the time limited.</i>																				
Points earned																				
Total possible points (22)																				

IX. Install and service an air conditioner or heat pump system with auxiliary electric to NATE Air Conditioning.

Tasks Instructions:

