



# **DIPLOMA IN AUTOMOBILE ENGINEERING**

## **CENTRALIZED QUESTION BANK**

**4021653 - Heating, Ventilation and Air  
Conditioning Systems Practical**

**DIRECTORATE OF TECHNICAL  
EDUCATION GOVERNMENT OF  
TAMILNADU**

## **DIPLOMA END SEMESTER / YEAR EXAMINATION – 2023**

**Course:** Automobile Engineering

**Subject :** Heating, Ventilation and Air Conditioning Systems  
Practical

**QP Code :** 4021653

**Time :** 3 Hours

**Date :**

**Session:**

**Max Marks:**100

### **Answer the Following Questions**

1.     A) Determine the refrigerating effect, C.O.P and the compressor capacity of open type system with any one expansion device. (Thermostatic expansion valve /Capillary tube /Automatic Expansion Valve.  
       B) Draw the layout of a bus air conditioning system. Inspect, identify the maintenance requirements as per the service manual.
2.     A) Determine the capacity of a window air conditioner.  
       B) List the components of a car air-conditioning system. Identify the common issues, possible causes and suggest remedies.
3.     A) Evaluate the condition of the car air conditioner by using electrical measurements with Thermostatic expansion valve.  
       B) Draw the layout of a bus air conditioning system. Inspect, identify the maintenance requirements as per the service manual.
4.     A) Conduct Leak tests in a vehicle air conditioning system, detect the failures and suggest the remedies. Conduct the Refrigerant Charge Test.  
       B) Draw the circuit diagram to identify the sensors in the HVAC system of a vehicle. Write the diagnostic procedures for sensors.
5.     A) Conduct the car A/c performance check. Identify the causes and its remedies  
       B) List the components of a car air-conditioning system. Identify the common issues, possible causes and suggest remedies.
6.     A) Conduct the flush test to remove the contaminants of refrigeration system.  
       B) Draw the circuit diagram to identify the sensors in the HVAC system of a vehicle. Write the diagnostic procedures for sensors.
7.     A) Evaluate the condition of the car air conditioner by using electrical measurements with Magnetic clutch.  
       B) List the components of a car air-conditioning system. Identify the common issues, possible causes and suggest remedies.

8. A) Evaluate the condition of the car air conditioner by using electrical measurements with Heater.
- B) Draw the layout of a bus air conditioning system. Inspect, identify the maintenance requirements as per the service manual.

**DETAILED ALLOCATION OF MARKS:**

S.NO	Description	Max. Marks	Marks obtained
PART - A			
1	Procedure/Observation	10	
2	Calculation/Failures	30	
3	Result/Remedies	10	
PART - B			
4	Procedure/Explanation	10	
5	Inspection/Diagnostic report	20	
6	Remedies/Maintenance report	10	
7	Viva voce	10	
	Total	100	