



DEPARTMENT OF AUTOMOBILE ENGINEERING

VISION

"To develop technically skilled engineers with value-based education in automotive industry to face upcoming chances".

MISSION

- *Understanding the need for regional automotive industries.*
- *Provide hands on skills for life long professional development.*
- *To create responsible students with sense of ethics & discipline.*

Subject Name: Automobile Air Conditioning (22653)

Date :-

Assignment No :- 1

Course Outcome: 605.1

Topic Name :- Heating, Ventilation and Air- conditioning System

1. Explain the vapour compression cycle.
2. Define the term conduction, convection and radiation.
3. Describe the ventilation system of a car with a sketch.
4. List the name of components used in car A.C. system.
5. State the function of the condenser used in the A.C. system.
6. Draw a general layout automotive air conditioning system.
7. Define – Comfort Air conditioning
8. Explain the requirements of the heating and ventilation system of a car.

Date of Submission :-

Assign By :- Mr. Rahul Gondhali



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Subject Name: Automobile Air Conditioning (22653)

Date :-

Assignment No :- 2

Course Outcome: 605.2

Topic Name :- Case and Duct System

1. Illustrate with sketch the use of a hybrid duct system.
2. Name the types of duct system used in vehicles.
3. Describe the ventilation system of a car with a sketch.
4. Differentiate between downstream and upstream duct systems.
5. Name the types of duct system used in vehicles.
6. Explain construction and working of rear heating and rear cooling systems in vehicles.
7. Describe with neat sketch air intake section, core section and distribution section of the duct.

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Subject Name: Automobile Air Conditioning (22653)

Date :-

Assignment No :- 3

Course Outcome: 605.3

Topic Name :- Air Conditioning System

1. Describe the general layout of an automotive air conditioning system.
2. What are the functions of the evaporator and condenser in an automotive air conditioning system
3. Compare and contrast reciprocating and rotary vane compressors.
4. Discuss the various properties of refrigerants used in automotive air conditioning systems.
5. Describe the working principle of an electromagnetic clutch in an automotive air conditioning system with diagram.
6. Explain the different types of thermostatic expansion valves (H valve, block type, internally equalized, externally equalized, and fixed orifice tube). How do these variations impact system performance?
7. Identify common symptoms of compressor failure their causes, and remedies to resolve these issues?

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Assignment No :- 4

Course Outcome: 605.4

Topic Name :- A.C. System Control Devices

1. Explain Vacuum control system and electronic temperature control system with diagram.
2. List Vacuum operated devices and explain any two of them with a diagram.
3. Explain high- Side temperature switch, low-side temperature switch,
4. Explain Pressure regulator with a neat diagram.
5. What are the different sensors used in A.C. System Control?
6. List and explain A.C. Control devices (Any Two) with a neat diagram.

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Subject Name: Automobile Air Conditioning (22653)

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Assignment No :- 5

Course Outcome: 605.5

Topic Name :- Maintenance of Air Conditioning System

1. Explain the importance of visual and acoustic inspection in the maintenance of an A.C. system.
 2. Describe the procedure for conducting a leak test on an A.C. system using a halide leak detector.
 3. Why is it critical to remove moisture from the A.C. system? Describe the consequences of moisture contamination.
 4. Outline the steps involved in evacuating an A.C. system before refrigerant charging.
 5. Explain the working and significance of the following tools in A.C. servicing:
 - a. Vacuum pump
 - b. Manifold gauge (low side and high side)
 6. Describe the role of a charging hose with a shut-off valve during the refrigerant charging process.
 7. A technician observes bubbles in the sight glass of an A.C. system. What could be the possible causes? Describe the diagnostic steps they should take.
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Subject Name: Automobile Air Conditioning (22653)

Date :-

Assignment No :- 6

Course Outcome: 605.6

Topic Name :- Heating System

1. Explain with sketch the given type of heating system in the vehicle.
2. What are the different types of heating systems used in Automobile Air Conditioning?
3. Describe with sketch the maintenance procedure for the given component of the heating System.
4. Describe with sketch the faults occurring in the given component of the heating system.
5. Explain Maintenance of the heating system: Fault diagnosis, remedial action

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