

23ME702

:REFRIGERATION AND AIR CONDITIONING

UNIT -5

Air Conditioning Refrigeration System

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- **Introduction**
- **What is Air Conditioning?**
- Air conditioning is the process of controlling:
 - Temperature
 - Humidity
 - Air purity
 - Air circulation
- **Used for human comfort and industrial needs.**

- **Objectives of Air Conditioning**
- **Main Objectives**
- Maintain comfortable indoor temperature
- Control humidity level
- Provide clean and fresh air
- Improve air quality
- Ensure proper air distribution

- **Types of Air Conditioning**
- **Classification**
- Comfort Air Conditioning
- Industrial Air Conditioning
- Summer Air Conditioning
- Winter Air Conditioning
- Year-round Air Conditioning

- **Comfort Air Conditioning**
- **Human Comfort System**
- Designed for human comfort
- Used in homes, offices, hotels
- Maintains temperature around 22°C–25°C
- Controls humidity and airflow

- **Condenser & Expansion Valve**
- **Condenser**
 - High-pressure vapor turns into liquid.
 - Heat is rejected to surroundings.
- **Expansion Valve**
 - Reduces pressure of liquid refrigerant.
 - Prepares it for evaporation.
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- **Industrial Air Conditioning**
- **Purpose**
- Used in industries
- Requires strict environmental control
- Examples:
 - Textile industry
 - Printing industry
 - Pharmaceutical industry
- Controls temperature, humidity, dust

- **Winter Air Conditioning**
- **Working in Winter**
- Heats indoor air
- Adds required humidity
- Uses heaters or heat pumps
- Maintains comfort in cold weather

- **Summer Air Conditioning**
- **Working in Summer**
- Lowers temperature of indoor air
- Removes moisture from air
- Uses refrigeration system
- Common in hot climates

- **Winter Air Conditioning**
- **Working in Winter**
- Heats indoor air
- Adds required humidity
- Uses heaters or heat pumps
- Maintains comfort in cold weather



Thank You..