

Product Name : " REFRIGERATION & AIR CONDITIONING TRAINER
"
Product Code : " R.A.C 51 "



Description :

REFRIGERATION & AIR CONDITIONING TRAINER:-

OBJECTIVE:-

1. Study of vapor compression cycle for Refrigeration & air conditioner.
2. To calculate Actual & Theoretical COP of Refrigeration system.
3. To calculate Actual & Theoretical COP of Air Conditioning system.

INTRODUCTION:-

Refrigeration: - Refrigeration is the branch of science that deals with the process of reducing and maintaining the temperature of a space of material below the temperature of the surrounding. Heat must be removed from the body being refrigerated and transferred to another whose temperature is below that of the refrigerated body.

Air conditioning: - Air conditioning is the simultaneous control of the temperature, humidity, motion and purity of the atmosphere in a confined space. Air conditioning applies in the heating season as well as in the cooling

season. The air conditioning has wide applications in submarine ships, aircrafts and rockets. Air conditioning is associated with the human comfort and controlling the humidity ratio.

THEORY:-

Refrigeration: -Refrigeration may be defined as the process of removing heat from a substance under controlled condition. It is used for the manufacture of ice and similar product. This is widely used for cooling of storage chamber in which perishable food, drinks, and medicines are stored. The refrigeration has also wide application in submarine ships, air crafts.

Air conditioning: - Air conditioning may be defined as the process of removing heat from a substance under controlled conditions. It also includes the process of reducing and maintains the temperature of a body below the general temperature of its surroundings. This is widely used for cooling of storage chambers in which perishable foods, drinks, and medicines are stored.

COMPRESSOR:

The low pressure and temperature of refrigerant from the evaporator is drawn into the compressor through the inlet and suction valve as it is compressed to high temperature and pressure. This high temperature and pressure vapor refrigerant is discharged into the condenser through the delivery pipe.

CONDENSER:

The condenser or cooler consists of pipe in which the high pressure and temperature refrigerant is cooled and condensed. The refrigerant while passing through the condenser gives up heat to the surrounding which consists of condensing medium which is normally air or water.

CAPILLARY TUBE:

It expands the liquid refrigerant at high pressure to the liquid refrigerant at low pressure so that a measured quantity of the liquid refrigerant is passed into the evaporator.

EVAPORATOR:

It consists of coils of pipe in which the liquid vapor refrigerant at low pressure and temperature is evaporated and changed to the vapor refrigerant at low temperature and pressure. In evaporating the liquid vapor refrigerant absorbs the latent heat of vaporization from the medium which is to be cooled. Evaporator the liquid refrigerant by absorbing the heat into vapor refrigerant and sends back in to the compressor.