

1. List each of the following as unit processes or unit operations

Oil filtration is a unit operation.

Ion exchange vessel is unit process

Combustion Gas Turbine is a unit operation

Caustic stripping tower is unit process

Reverse Osmosis system is a unit operation

An on-off controller is the honest type of temperature system gadget. The yield from the practical is either on or off, with no focal state. An on-off controller will change the yield just while the temperature denote the setpoint. For warming control, the generation is on when the temperature is under the setpoint, and off above setpoint. Since the warmth crosses the setpoint to change the yield express, the procedure temperature will cycle much of the time, effective from beneath set-point to above, and back underneath. This controller uses a hooking pass on, which essential to be physically retuned, and is castoff to down and out a procedure when an unmistakable temperature is gotten a handle on.

The third regulator type delivers proportional with essential and imitative PID. This controller syndicates proportional regulator with two supplementary adjustments, which assists the unit habitually compensate for fluctuations in the scheme. It is suggested in systems somewhere the load vicissitudes often and the organiser is expected to reimburse mechanically due to recurrent changes in set-point, the quantity of energy obtainable, or the physique to be meticulous.

OMEGA proposes a number of controllers that automatically tune themselves.

2. QUESTION 2

- Petrochemicals, Industrial Organic Chemical Producers

Manufacturers of olefins, alcohols, ethylene and ethylene-based chemicals

- Industrialized Inorganic Chemicals (Specialty Chemicals)

The company is engaged in the manufacture of acids and similar chemicals.

- Industrial Gases

Industrialists of hydrogen, nitrogen, oxygen, argon and other industrial gases.

- Agricultural Biochemical Industry

Mass runny and strong (granular, powder) farming produce makers, including composts, herbicides, pesticides, fungicides, and intermediates

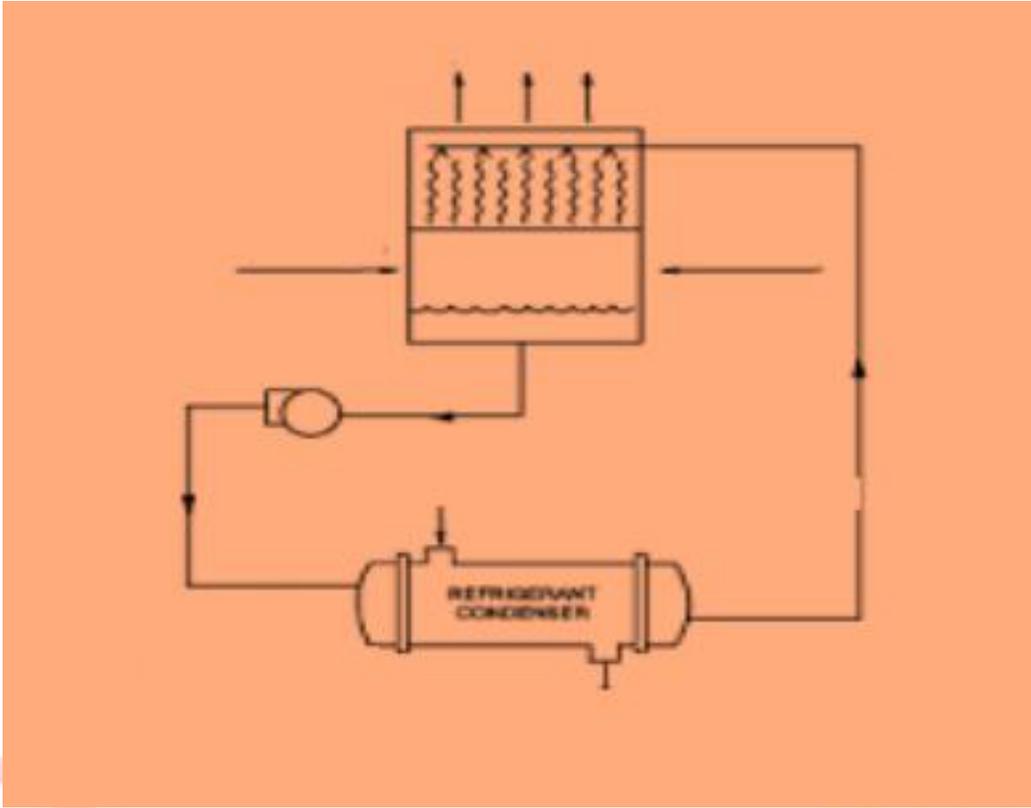
Plastics, Elastics, and Resins Industrialists  
The assembling of counterfeit pitches, pliant materials (polyethylene, polypropylene and comparable items), nonvulcanizable elastomers, artificial elastic by polymerization or copolymerization.

- Colorants

Industrialists of insignia and titanium dioxide. Redeems include ferric oxide pigments, inorganic pigments, iron oxides, and paint pigments.

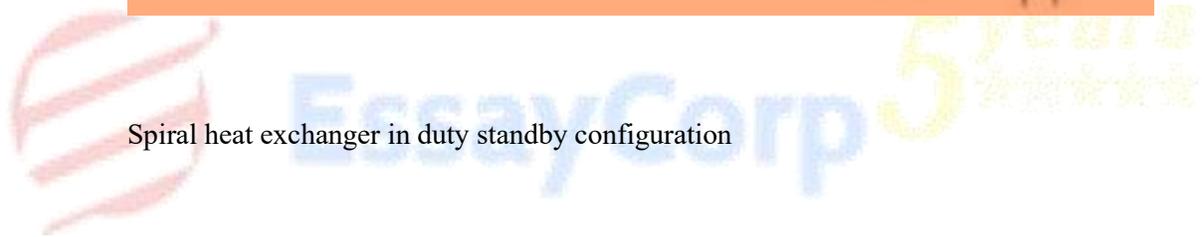
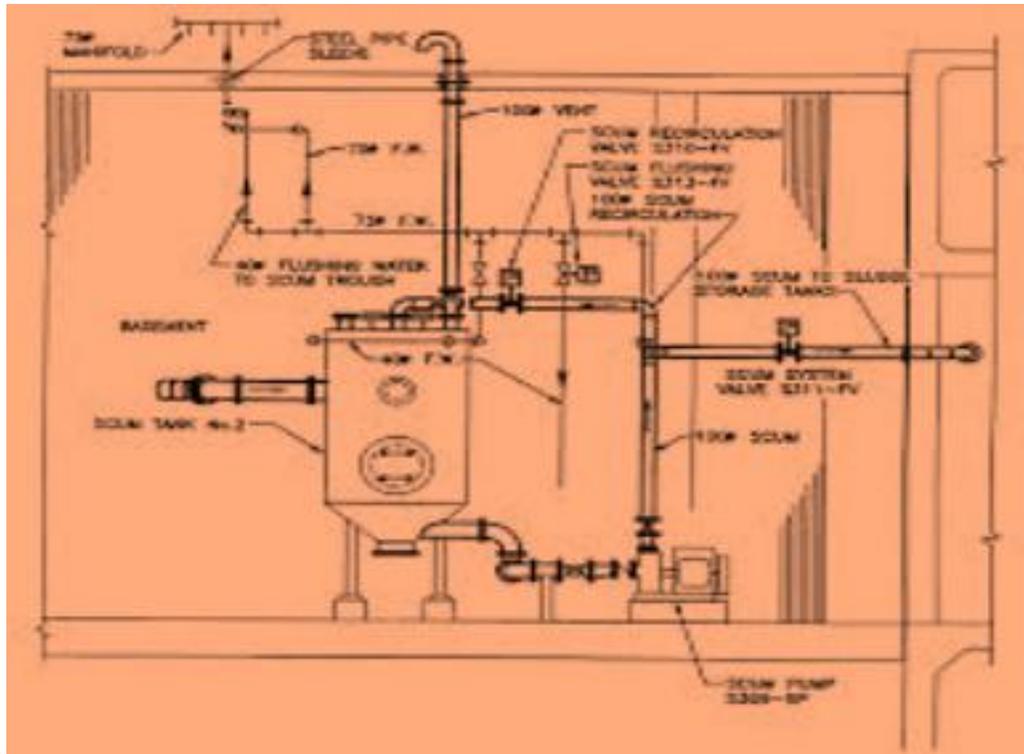
3.

large air forced cooling tower



Small vertically mounted shell and tube





Spiral heat exchanger in duty standby configuration

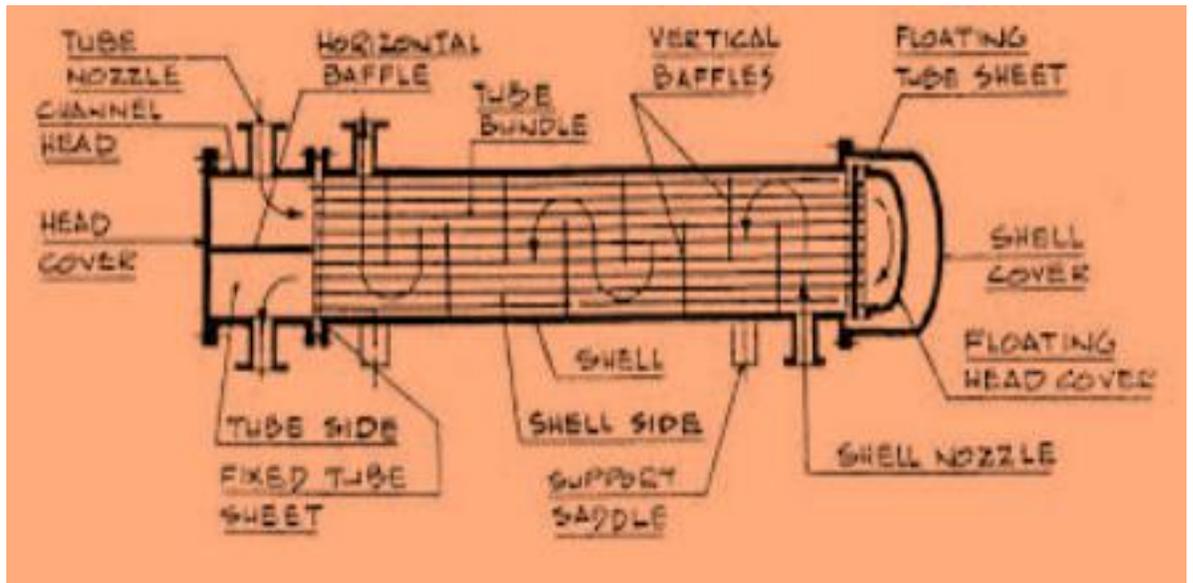
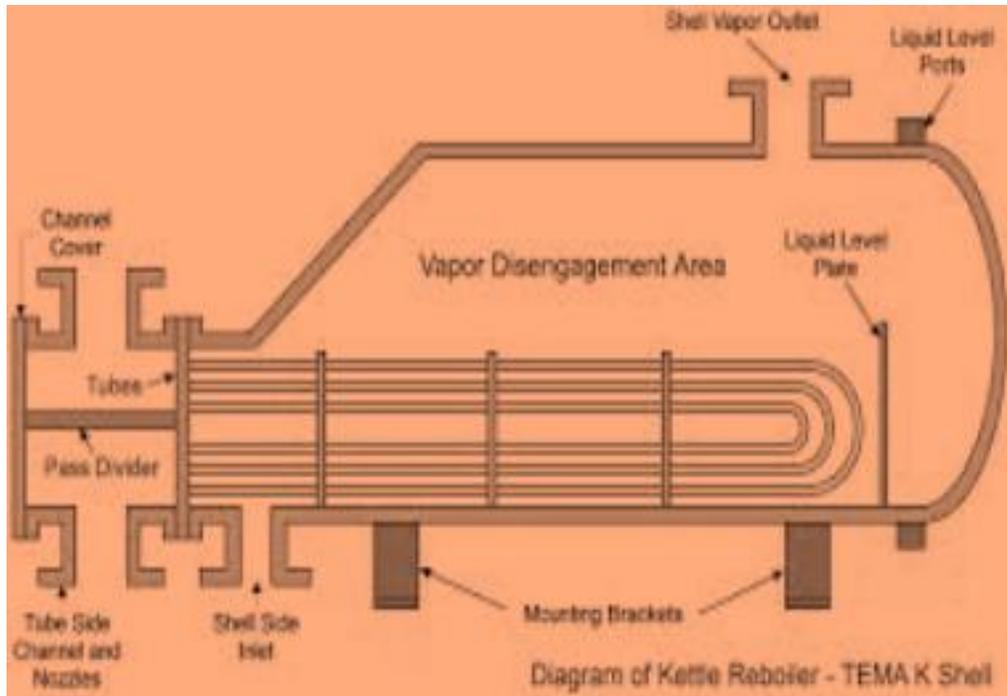
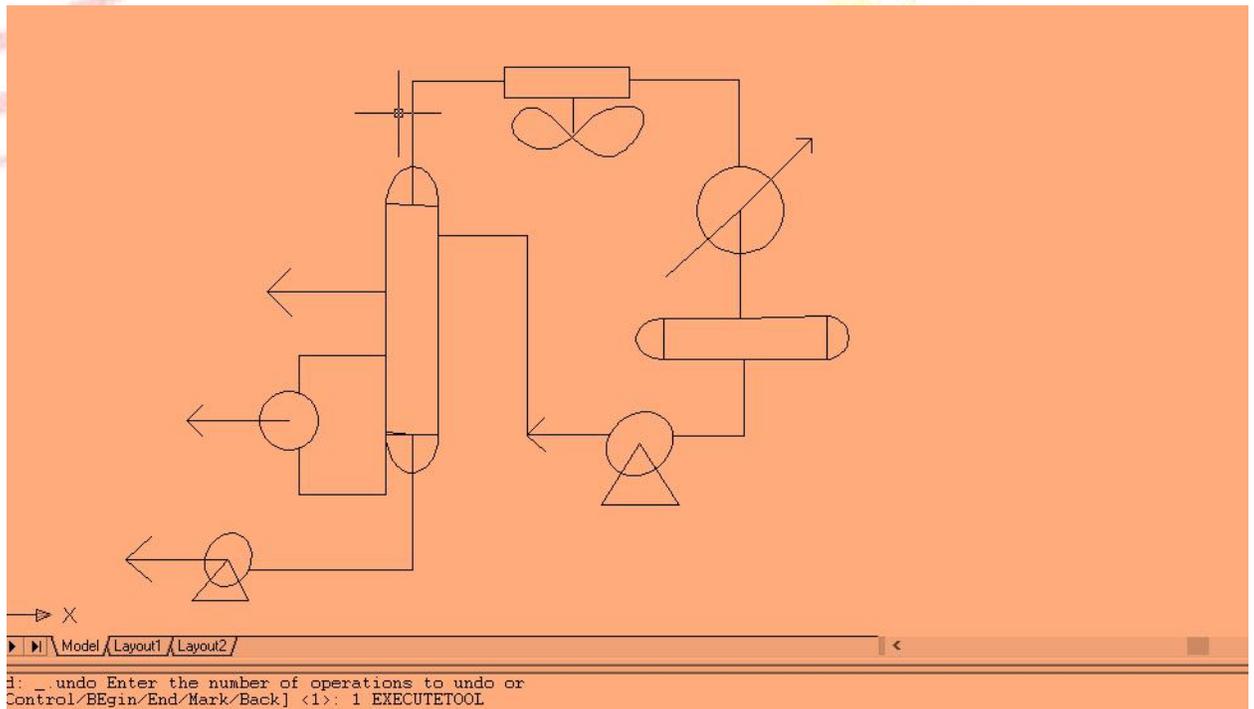


Plate and frame heat exchangers in duty/duty arrangement



4. Question four



5. QUESTION FIVE

