

Self Assessment

1. Process of producing cold or maintaining low temperatures is called as _____.
2. Mathematical representation of 1st Law of thermodynamics is _____.
3. _____ is required to pump the heat from low temperature to high temperature.
4. _____ is the ratio of heat extracted (Q_L) to the work input (W) at a particular temperature.
5. Mathematical representation of COP is _____.

Self Assessment

6. COP at 100 K is 0.5. It means that _____ W of input power is required to deliver _____ W of cooling power at 100 K.
7. A refrigerator operates in a _____ thermodynamic cycle.
8. A liquefier operates in a _____ thermodynamic cycle.
9. A Joule – Thompson expansion is an _____ expansion.

Self Assessment

10. Fill the following table.

μ_{JT}	Effect
> 0	_____
< 0	_____
$= 0$	_____

11. _____ does not show any change in temperature when it undergoes J – T expansion.

Answers

1. Refrigeration

2. $dQ = dU + dW$

3. work

4. COP

5. $COP = \frac{Q_L}{W}$

6. 2 W, 1W

7. closed

8. open

Answers

9. Isenthalpic

10.

μ_{JT}	Effect
>0	Cooling
<0	Heating
$=0$	No effect

11. Ideal gas