Self Assessment

In a reversible Claude system, if T_1, T_2, T_3 are held constant,

1. The y_{max} _____ with the decrease in T_3.

2. W/m_{fmin} _____ with the decrease in T_3.

3. The overall inefficiency of compressor is _____

4. The overall inefficiency of an expander is _____

5. Kapitza and Heylandt systems are the modifications of the _____ System.

6. _____ system is widely used in helium liquefaction.

7. The regenerator/heat exchanger performs both _____ & _____.

Self Assessment

8. _____ system was the first one to use a turbo – expander.

9. _____ system is a high – pressure Air liquefaction system.

10. In a Heylandt system, the inlet to the expander is at _____.

11. _____ system is considered as one of the biggest milestones in Cryogenic Engineering.

12. The inversion temperature of Helium is around _____.

Answers

1. Decreases

2. Increases

3. $\eta_{oval,c} = \eta_{mech,c} \times \eta_{iso,c}$

4. $\eta_{oval,e} = \eta_{mech,e} \times \eta_{ad,e}$

5. Claude

6. Collins

7. Gas cooling/warming, Gas purification

8. Kapitza

9. Heylandt

Answers

10. Ambient

11. Collins

12. 45 K