

Unit 4 - Week 3

Assignment 3

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-08-21, 23:59 IST.

1) The optimum intermediate pressure P_2 in a two-stage air compressor having P_1 and P_3 as a suction and delivery pressures respectively, equal to **1 point**

- $\sqrt{P_1 P_2}$
 $\frac{1}{2} \sqrt{P_1 P_2}$
 $\sqrt{\frac{1}{2} P_1 P_2}$
 $\frac{1}{2} P_1 P_2$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$$\sqrt{P_1 P_2}$$

2) In vapor compression refrigeration system, a refrigerant exists in the form of liquid between **1 point**

- evaporator and compressor
 compressor and condenser
 condenser and expansion valve
 all of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

condenser and expansion valve

3) A multistage air compressor as compared to single stage compressor **1 point**

- Gives more uniform torque
 Reduces work done per kg of air
 Improves volumetric efficiency for a given pressure ratio
 All of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

All of the above

4) Phenomenon of choking in compressor means **1 point**

- No flow of air
 Fixed mass flow rate regardless of pressure ratio
 Reducing mass flow rate with increase in pressure ratio
 Increased inclination of chord with air stream

No, the answer is incorrect.

Score: 0

Accepted Answers:

Fixed mass flow rate regardless of pressure ratio

5) In a multistage compression system with flash gas removal, fluid at the entry of the expansion valve before the evaporator is **1 point**

- dry and saturated vapor
 superheated vapor
 vapor quality $0 < x < 1.0$
 saturated liquid

No, the answer is incorrect.

Score: 0

Accepted Answers:

saturated liquid

6) A single-acting two-stage compressor with inter cooling delivers air at 16 bar. Assuming an intake state of 1 bar at 15°C , the pressure ratio per stage is **1 point**

- 16
 8
 4
 2

No, the answer is incorrect.

Score: 0

Accepted Answers:

4

7) What is the highest possible theoretical efficiency of a heat engine operating with a hot reservoir of furnace gases at 2100°C when the cooling water available is at 15°C ? **1 point**

- 87.80 %
 78.67 %
 89.27 %
 87.52 %

No, the answer is incorrect.

Score: 0

Accepted Answers:

87.80 %

8) Read the following and answer questions 8-10. **1 point**

A refrigeration compressor of 50 mm bore and 40 mm stroke operates at a speed of 1460 rpm between condensing and evaporating pressure limits of 1.219 MPa and 0.151 MPa. The clearance ratio is 5% ratio of specific heats of refrigerant is 1.18, specific volume of refrigerant at suction is 0.11 m³/kg and the enthalpy change of refrigerant in the evaporator is 93.7 kJ/kg.

Temp. °C	Pressure, bar	Enthalpy		Volume	
		Sat. liq. kJ/kg	Sat. vap. kJ/kg	Sat. liq. kJ/kg	Sat. vap. kJ/kg
5	5.836	205.9	407.1	0.791	0.040
50	19.423	263.3	417.7	0.922	0.0117

The Volumetric efficiency is

- 0.7564
 0.2315
 0.06263
 0.36515

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.7564

9) Mass flow rate of refrigerant, kg/sec **1 point**

- 0.4605
 0.11753
 0.07231
 0.01314

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.01314

10) Refrigeration load the compressor can serve, kW **1 point**

- 1.862
 1.231
 2.32
 4.561

No, the answer is incorrect.

Score: 0

Accepted Answers:

1.231

Course outline

How to access the portal?

Week 1

Week 2

Week 3

 Actual Vapour Compression Cycle-2

 Compound Compression with Intercooling-1

 Compound Compression with Intercooling-2

 Multiple Evaporator and Cascade System

 Problem Solving

 Quiz : Assignment 3

Week 4

Week 5

Week 6

Week 7

Week 8

Download Videos

Feedback Link