

## Unit 11 - Week 9:

## Course outline

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## Assignment 9

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

Due on 2019-10-02, 23:59 IST.

1) What is the desired effect in a heat pump system

1 point

- a. Reduction in energy cost
- b. External work
- c. Heat rejected at higher temperature
- d. Heat extracted at the lower temperature

No, the answer is incorrect.

Score: 0

Accepted Answers:

c. Heat rejected at higher temperature

2) Size of a heat pump depends on

1 point

- a. Air volume and air charge requirement
- b. Cooling Load
- c. Heating requirement
- d. All of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

d. All of the above

3) In a winter heat pump, what can be the use of the chilled air?

1 point

- a. Use in a water cooler
- b. Use to cool data centers
- c. Refrigerate products in a dairy farm
- d. Run a vapour absorption cycle

No, the answer is incorrect.

Score: 0

Accepted Answers:

a. Use in a water cooler

b. Use to cool data centers

c. Refrigerate products in a dairy farm

4) For an air-air heat pump used for year round air conditioning, what is the function of the 4-way valve?

1 point

- a. Enables use of the same working fluid both in winter and summer
- b. Reverses the functioning of the evaporator and condenser
- c. Reduces irreversibilities
- d. Improves COP of the Heat Pump

No, the answer is incorrect.

Score: 0

Accepted Answers:

b. Reverses the functioning of the evaporator and condenser

5) Why does a Templifier unit employ a two-stage compression cycle?

1 point

- a. Increase refrigeration capacity
- b. Reduce capital cost
- c. Improve COP
- d. Handle high temperature lift

No, the answer is incorrect.

Score: 0

Accepted Answers:

c. Improve COP

d. Handle high temperature lift

6) An incineration plant can be used for

1 point

- a. Remove pollutants from gaseous waste
- b. Disposal of waste
- c. Process heating
- d. All of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

d. All of the above

7) In the fume incinerator discussed in class, what is the gas that is used for polyester synthesis?

1 point

- a. Malic Anhydride
- b. Poly propylene
- c. n-Butane
- d. CO2

No, the answer is incorrect.

Score: 0

Accepted Answers:

c. n-Butane

8) A heat pump using R12 is to be used for winter space heating of a residence. The building heat loss is 20 kW. Compression is reversible and adiabatic. Inside temp of building is 25°C, environment is at 5°C. Determine the COP of the heat pump

1 point

- a. 1.25
- b. 4.5
- c. 0.8
- d. 15

No, the answer is incorrect.

Score: 0

Accepted Answers:

d. 15

9) For the above heat pump (Question 8), what is the work done by the compressor?

1 point

- a. 1.5 kW
- b. 4.5 kW
- c. 16 kW
- d. 25 kW

No, the answer is incorrect.

Score: 0

Accepted Answers:

a. 1.5 kW

10)For the above problem, if the same work is supplied to the compressor in summer where the ambient is at 40°C and room is maintained at 25°C, determine the rating of the unit for cooling

1 point

- a. 20 kW
- b. 25 kW
- c. 30 kW
- d. 15 kW

No, the answer is incorrect.

Score: 0

Accepted Answers:

c. 30 kW

11)For Question 10, what would be the COP for cooling?

1 point

- a. 25
- b. 20
- c. 2.5
- d. 3

No, the answer is incorrect.

Score: 0

Accepted Answers:

b. 20