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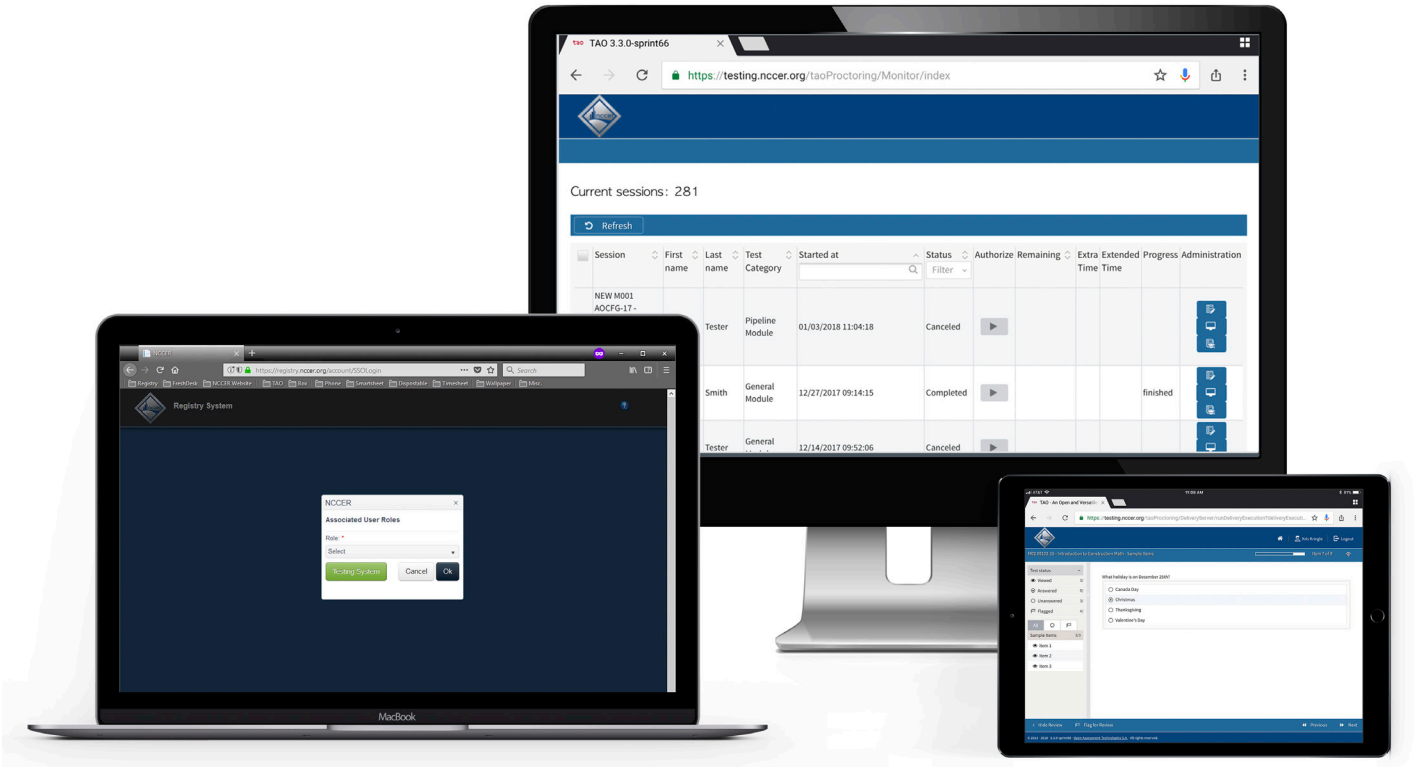

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Module 19303 Exam

Heat Transfer

Trainee Name: _____

Social Security Number: _____ Date: _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1. Which of the following is a correct statement?
   a. Insulation accelerates the flow of heat.
   b. Heat flows from a lower temperature to a higher temperature.
   c. The greater the temperature difference, the greater the quantity of heat transfer.
   d. Metals are poor conductors of heat.

2. The transfer of heat between two bodies in physical contact is called _____.
   a. conduction
   b. convection
   c. radiation
   d. connection

3. Foamed plastic materials have low K-factors, which means they _____.
   a. readily allow the passage of heat
   b. are more efficient when they are wet
   c. are most effective in high-temperature applications
   d. do not readily conduct heat

4. The K-factor is a measure of _____.
   a. thermal conductivity
   b. insulation thickness
   c. insulation density
   d. relative humidity

5. Thermal resistance (R-factor) is the mathematical result of _____.
   a. insulation thickness divided by the K-factor
   b. K-factor divided by ambient temperature
   c. ambient temperature multiplied by K-factor
   d. relative humidity multiplied by ambient temperature

6. All of the following are factors that influence heat loss except _____.
   a. ambient temperature
   b. relative humidity
   c. insulation color
   d. insulation thickness

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7. Unlike other types of insulation materials, increasing the density of fibrous glass products may _____.
   a. improve their thermal conductivity
   b. destroy their insulating value
   c. decrease their insulating value
   d. increase their insulating value

8. Elastomeric is a type of _____.
   a. calcium silicate insulation
   b. flexible foam insulation
   c. fiberglass pipe insulation
   d. cellular glass insulation

9. When elastomeric insulation is exposed to high temperature, it will _____.
   a. catch fire
   b. melt
   c. harden
   d. deform

10. Halogen-free flexible foam insulation is manufactured specifically for _____.
    a. use on stainless steel
    b. sheet insulation
    c. high temperature use
    d. preformed pipe insulation

11. Which of these insulating materials would be used on high-temperature steam piping?
    a. Flexible foam
    b. Calcium silicate
    c. Phenolic
    d. Polyisocyanurate

12. Of these four types of rigid foam insulation, which has the highest insulating value?
    a. Polystyrene (XPS)
    b. Polyisocyanurate
    c. Phenolic
    d. Polystyrene (EPS)

13. Which of the following insulating materials is best suited for cold-temperature applications?
    a. Calcium silicate insulation
    b. Flexible foam insulation
    c. Fiberglass pipe insulation
    d. Cellular glass insulation

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14. Which of the following is considered to be excellent for use on underground pipes?
    a. Phenolic insulation
    b. Cellular glass insulation
    c. Fiberglass pipe insulation
    d. XPS

15. Which of the following has the lowest operating temperature range?
    a. Glass wool
    b. Ceramic wool
    c. Steel wool
    d. Stone wool

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Module 19303 Answer Key

Heat Transfer

Question	Answer	Section Reference	Objective
1.	C	1.0.0	1a
2.	A	1.1.1	1a
3.	D	2.4.0	2b
4.	A	1.2.0	1b
5.	A	1.3.0	1c
6.	C	2.0.0	2a
7.	D	2.1.0	2a
8.	B	2.2.0	2b
9.	C	2.2.0	2b
10.	A	2.2.0	2b
11.	B	2.3.0	2c
12.	C	2.4.0	2d
13.	D	2.4.0	2d
14.	B	2.4.0	2d
15.	A	2.5.0	2e