Refrigeration and Air Conditioning Technology 8th edition Tomczyk Test Bank

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Name:_____ Class:_____ Date:_____

Unit 2 - Matter and Energy

Refrigeration and Air Conditioning Technology

1. A solid material exerts a pressure or force ____.

a. in all directions
b. downward only
c. outward and downward
d. outward only

ANSWER: b
POINTS: 1
REFERENCES: Matter
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
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2. A liquid material exerts a pressure or force ____.

a. in all directions
b. downward only
c. outward and downward
d. outward only

ANSWER: c
POINTS: 1
REFERENCES: Matter
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
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3. A vapor material exerts a pressure or force ____.

a. in all directions
b. downward only
c. outward and downward
d. outward only

ANSWER: a
POINTS: 1
REFERENCES: Matter
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
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4. If the temperature remains constant and the volume that a gas occupies increases, the pressure will ____.

a. decrease
b. increase
c. remain the same
d. cannot be determined from the information given

ANSWER: a
POINTS: 1
REFERENCES: Gas Laws
QUESTION TYPE: Multiple Choice

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5. The volume of gas varies inversely with the absolute pressure, provided the temperature remains constant. This is called ____.

a. Charles' Law b. Tom's Law
c. Boyle's Law d. Dalton's Law

ANSWER: c
POINTS: 1
REFERENCES: Gas Laws
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
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6. At a constant pressure, the volume of a gas varies as to the absolute temperature and at a constant volume the pressure of the gas varies directly with the absolute temperature. This is known as ____.

a. Charles' Law b. Tom's Law
c. Boyle's Law d. Dalton's Law

ANSWER: a
POINTS: 1
REFERENCES: Gas Laws
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
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7. The total pressure of a confined mixture of gases is the sum of the pressures of each of the gases in the mixture. This is known as ____.

a. Charles' Law b. Tom's Law
c. Boyle's Law d. Dalton's Law

ANSWER: d
POINTS: 1
REFERENCES: Gas Laws
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
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8. A helicopter is lifting an 800-pound unit at a rate of 200 feet per minute. How many horsepower of work energy is the helicopter using in the process?

a. 3.863 hp. b. 4.517 hp.

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c. 4.848 hp. d. 5.209 hp.
ANSWER: c
POINTS: 1
REFERENCES: Power
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
DATE CREATED: 3/12/2015 12:21 PM
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9. The unit used to measure electrical power is the ____.
a. volt b. ampere
c. watt d. ohm
ANSWER: c
POINTS: 1
REFERENCES: Electrical Power
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
DATE CREATED: 3/12/2015 12:21 PM
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10. One watt of electrical energy is equal to ____.
a. 3.1416 Btu/h b. 3.413 Btu/h
c. 3.3416 Btu/h d. 3.3146 Btu/h
ANSWER: b
POINTS: 1
REFERENCES: Electrical Power
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
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DATE MODIFIED: 12/19/2015 11:31 AM

11. How many watts of electrical power are equal to 1 horsepower?
a. 33000. b. 15000.
c. 746. d. 660.
ANSWER: c
POINTS: 1
REFERENCES: Electrical Power
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
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12. Specific volume is the term used to indicate the space a weight of gas will occupy.
    a. True
    b. False

ANSWER: True
POINTS: 1
REFERENCES: Specific Volume
QUESTION TYPE: True / False
HAS VARIABLES: False
DATE CREATED: 3/12/2015 12:21 PM
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13. As heat is applied to a closed container containing a gas, the pressure inside the container will decrease.
    a. True
    b. False

ANSWER: False
POINTS: 1
REFERENCES: Gas Laws
QUESTION TYPE: True / False
HAS VARIABLES: False
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14. An example of a fossil fuel is hydrogen.
    a. True
    b. False

ANSWER: False
POINTS: 1
REFERENCES: Conservation of Energy
QUESTION TYPE: True / False
HAS VARIABLES: False
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15. A law of conservation of energy states that energy is neither created nor destroyed.
    a. True
    b. False

ANSWER: True
POINTS: 1
REFERENCES: Conservation of Energy
QUESTION TYPE: True / False
HAS VARIABLES: False
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16. Heat is a form of energy because of the motion of molecules.
    a. True
    b. False

ANSWER: True
POINTS: 1
REFERENCES: Energy Contained in Heat
QUESTION TYPE: True / False
HAS VARIABLES: False
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17. A material that occupies space and has mass is called _____.
ANSWER: matter
POINTS: 1
REFERENCES: Matter
QUESTION TYPE: Completion
HAS VARIABLES: False
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18. Matter exists in three states: _____, _____, and _____.
ANSWER: solid, liquid, gas
solid, gas, liquid
gas, liquid, solid
gas, solid, liquid
liquid, gas, solid
liquid, solid, gas
POINTS: 1
REFERENCES: Matter
QUESTION TYPE: Completion
HAS VARIABLES: False
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19. The law that states that "energy is neither created or destroyed, but can be converted from one form to another" is called the _____.
ANSWER: law of conservation of energy
POINTS: 1
REFERENCES: Conservation of Energy
QUESTION TYPE: Completion
HAS VARIABLES: False

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20. Most of the energy we use comes from something we already have on Earth. The only "new" energy we get comes from the _____.
ANSWER: sun
POINTS: 1
REFERENCES: Conservation of Energy
QUESTION TYPE: Completion
HAS VARIABLES: False
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21. _____ ft-lb of work is accomplished when an 800-lb condensing unit is lifted to the top of a 40-ft building.
ANSWER: 32,000
32000
Thirty two thousand
POINTS: 1
REFERENCES: Energy Used as Work
QUESTION TYPE: Completion
HAS VARIABLES: False
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22. One horsepower of work energy equals the amount of work done when lifting _____ pounds to the height of _____ foot in _____ minute.
ANSWER: 33,000, 1, 1
33000, 1, 1
Thirty three thousand, one, one
POINTS: 1
REFERENCES: Power
QUESTION TYPE: Completion
HAS VARIABLES: False
DATE CREATED: 3/12/2015 12:21 PM
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23. The unit of measurement of electrical power is the _____.
ANSWER: watt
watt (W)
POINTS: 1
REFERENCES: Electrical Power-The Watt
QUESTION TYPE: Completion
HAS VARIABLES: False

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24. One pound of ice at 20°F exerts its force downward. After absorbing 200 Btus, what direction(s) will the force be exerted? After absorbing 2000 Btus?
ANSWER: In the first case, force is exerted outward and downward; in the second, in all directions.
POINTS: 1
REFERENCES: Matter
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: False
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25. Define an atom.
ANSWER: An atom is the smallest part of a material.
POINTS: 1
REFERENCES: Matter
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: False
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26. Define a molecule.
ANSWER: A molecule consists of atoms and cannot be broken down further without changing the chemical composition of the substance.
POINTS: 1
REFERENCES: Matter
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: False
DATE CREATED: 3/12/2015 12:21 PM
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27. Define density.
ANSWER: The mass to volume relationship of a material.
POINTS: 1
REFERENCES: Density
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: False
DATE CREATED: 3/12/2015 12:21 PM
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28. Define specific gravity.
ANSWER: The ratio of the density of a cubic foot of a material as compared to a cubic foot of water in liquid

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form.
POINTS: 1
REFERENCES: Specific Gravity
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: False
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29. Define specific volume.
ANSWER: The volume in cubic feet that a one pound quantity of vapor will occupy.
POINTS: 1
REFERENCES: Specific Volume
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: False
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30. Define power.
ANSWER: The rate of doing work.
POINTS: 1
REFERENCES: Power
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: False
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Match the gas law with its properties.
a. Boyle’s law
b. Charles' law
c. Dalton's law
REFERENCES: Gas Laws
QUESTION TYPE: Matching
HAS VARIABLES: False
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31. V1 / T1 = V2 / T2
ANSWER: b
POINTS: 1

32. PTOTAL = PSUBSTANCE 1 + PSUBSTANCE 2
ANSWER: c
POINTS: 1

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33. P1 × V1 = P2 × V2
ANSWER: a
POINTS: 1

Match the following terms with their proper units and/or formulas.
a. Specific volume
b. hp
c. Specific gravity
d. Density
e. 1 kW
f. Work

REFERENCES: Energy Used as Work
Electrical Power-The Watt
Specific Volume
Specific Gravity
Power
Density
QUESTION TYPE: Matching
HAS VARIABLES: False
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34. Force × Distance
ANSWER: f
POINTS: 1

35. 3413 Btu/h
ANSWER: e
POINTS: 1

36. ft3/lb
ANSWER: a
POINTS: 1

37. No units
ANSWER: c
POINTS: 1

38. 33,000 ft-lb/min
ANSWER: b
POINTS: 1

39. lb/ft3
ANSWER: d

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POINTS: 1

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