Water Wells Combination Part 1

RV 01.23.2023

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Quiz 1

1. A check valve is located at the pump _____.
- discharge
- suction
- discharge and suction
- none of the answers provided

2. A check valve is used to _____.
- hold pressure in a system
- prevent upthrust inside the pump
- prevent water hammer
- prevent backspin
- all of the answers provided

3. A rope insert adapter is used as a tie-off point to attach a safety rope to the submersible pump.
- True
- False

4. A stainless steel clamp is a simple compression fastening device.
- True
- False

5. A heat sink splice is usually placed _____ the normal water level.
- under
- above
- either above or below (since the splice is waterproof)

6. A torque arrestor _____.
- keeps the pump electrically isolated
- is filled with oil
- keeps the discharge pipe from bouncing into the well casing on pump starts and stops
- stops unauthorized torques

7. A safety rope is attached to _____.
- the pump
- the pump discharge pipe
- the check valve
- the heat splice

8. A cable tie _____.
- is black in color
- is white in color
- helps keep the cable snuggly attached to the piping
- none of the answers provided

9. A cable guard keeps and secures the cables from tangling, and helps to prevent further damage.
- True
- False

10. Pitless adapters _____.
- are made using a metal casting process that leaves no pits or inclusions in the cast metal
- must be brass
- are designed to make a watertight connection on the side of the well casing
- none of the answers provided

11. Male/female insert adapters are used to _____.
- connect pipes throughout the system
- connect electrical fittings throughout the system
- connect the safety rope to the casing and the pump
- connect the power control box to the main power supply
- none of the answers provided

12. The well cap _____.
- is an upgrade from a well hat
- is a downgrade from a well hat
- must be blue in color
- provides a sanitary cover on a well
- none of the answers provided

13. A well seal is used when the pump discharge piping is _____.
- above ground
- below ground
- underwater
- in a concrete slab

14. A check valve needs to be installed _____.
- vertically
- horizontally
- upside down
- in the direction of flow as indicated by the arrow on the valve body
- in either direction from the indicated arrow

15. A tank tee may have the following (devices) pre-installed:
- Check valves
- Drain valves
- Pressure gauges
- Pressure controls
- All of the answers provided

16. A drain valve is installed _____.
- at the low point of the pressure tank
- at the overflow point of the pressure tank
- at the base of the submersible pump
- at the pump discharge pipe
- none of the answers provided

17. A nipple is _____.
- usually less than 12 inches
- usually greater than 12 inches
- constructed of brass
- constructed of steel
- none of the answers provided

18. Pressure relief valves are generally set to relieve pressure in excess of _____.
- 25 psi
- 50 psi
- 75 psi
- 100 psi
- 200 psi

19. A pressure gauge is installed in the system to help monitor the system performance.
- True
- False

20. Typical pressure switch settings are _____ to _____.
- Cut-In 20 – Cut-Out 40
- Cut-In 30 – Cut-Out 50
- Cut-In 40 – Cut-Out 60
- all of the answers provided
- none of the answers provided

21. A safety switch is also known as _____.
- a disconnect
- an on/off switch
- an electrical control box
- a master control
- all of the answers provided

22. The purpose of a pump saver is to protect the pump from _____.
- tampering
- over/under voltage conditions
- long run times
- unauthorized use
- none of the answers provided

23. A lightning arrestor protects the electrical components from _____.
- incoming voltage surges
- incoming arch flashes
- ungrounded circuits
- blown fuses
- 3 phase power

24. A ball vale is used to isolate the storage tank.
- True
- False

25. A pressure tank is used _____.
- as a storage tank
- to keep the system pressurized
- to help keep the pump from short cycling
- all of the answers provided
- none of the answers provided

26. The pump motor is located _____.
- above the pump
- below the pump
- at the top of the well casing
- in the pressure tank
- none of the answers provide

Quiz 2

Summary Table – Estimating Peak Demand Water Usage		
Name of Method	**Procedure**	**Peak Demand Calculation**
Method 1. Counting the Total Number of Fixtures	Count the total number of fixtures in the structure	Total Number of Fixtures x 1 gpm per fixture = gpm demand
Method 2. Counting the Number of Fixtures in Use	Count the total number of fixtures in USE at one time	Total number in USE x 3 gpm = gpm demand
Method 3. Counting the Number of Bathrooms and Fixtures in Use	Count the number of bathrooms in the house and the fixtures being used	Use Flow Rate Table (below) to determine peak demand
Method 4. Counting the Number of Bathrooms	Count number of full baths and half baths in house	Number of baths = full baths and half baths. x 4 gpm = peak demand
Method 5. Counting the Number of People	Count the number of people staying at the house	Number of people x 4 gpm = peak demand

	Flow Rate (GPM)	**Total Usage (Gallons)**	**Flow Rate Table - Bathrooms in house Count the fixtures in use**			
			1	**1.5**	**2-2.5**	**3-4**
Shower or Bathtub	5	35	35	35	53	70
Lavatory	4	2	2	4	6	8
Toilet	4	5	5	10	15	20
Kitchen Sink	5	3	3	3	3	3
Automatic Washer	5	35	18	18	18	18
Dishwasher	2	14g	-	-	3	3
Total gal. in 7-minute peak flow						
Minimum sized pump required to meet peak demand without supplemental supply (Total/ 7) = ____ gpm						

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RV 01.23.2023

1. A method used to calculate well water demand is known as a _____.
- guess-tamation
- Kentucky Windage
- WAG
- peak demand
- none of the answers provided

2. Method 1. Counting Total # of Fixtures.
Counting the fixtures in a residence can be used in determine water system pipe sizes.
- True
- False

3. Method 1. Counting Total # of Fixtures.
A house has 10 fixtures; the estimated demand would be _____.
- 1 gpm
- 5 gpm
- 10 gpm
- 20 gpm
- none of the answers provided

4. Peak demand usually occurs _____ in 24 hours.
- once
- twice
- three times
- impossible to estimate
- none of the answers provided

5. Method 2. Counting Number of Fixtures in Use.
This method of estimating peak demand assumes _____ for each fixture being used.
- 1 gpm
- 2 gpm
- 3 gpm
- 4 gpm
- 5 gpm

6. Method 2. Counting Number of Fixtures in Use.
The estimated total gallons in a 7-minute peak flow for a 4-bathroom house with 6 fixtures in use would be _____.
- 45
- 70
- 98
- 112
- 126

7. Method 2. Counting Number of Fixtures in Use.
The gpm for the previous example would be _____.
- 7 gpm
- 10 gpm
- 14 gpm
- 16 gpm
- 18 gpm

8. Method 5. Counting the Number of People.
The estimated peak demand (7 minutes) for a family of 4 would be _____.
- 70 gallons
- 107 gallons
- 112 gallons
- 142 gallons
- 173 gallons

9. Method 5. Counting the Number of People.
The estimated peak (7 minute) demand for a family of 6 would be _____.
- 160 gallons
- 168 gallons
- 191 gallons
- 234 gallons
- 310 gallons

10. Method 5. Counting the Number of People.
The estimated peak (7 minute) demand for a family of 3 would be _____.
- 80 gallons
- 84 gallons
- 121 gallons
- 153 gallons
- 192 gallons

11. Use all 5 methods to determine peak demand in gpm for the following example: A 3-bedroom house (4 occupants) with 12 fixtures, 2 full bathrooms, using 6 fixtures simultaneously (2 showers, 2 lavatories, dishwasher and kitchen sink). The greatest estimated peak demand would be _____.
- 10 gpm
- 12 gpm
- 16 gpm
- 18 gpm
- 24 gpm

12. The maximum peak demand (7 minute) from the previous example is calculated using the _____ method.
- number of fixtures
- number of fixtures in use
- number and type of fixtures
- number of bathrooms
- counting number of people

13. Use all 5 methods to determine peak demand (7 minute) in gpm for the following example: A 4-bedroom house (5 occupants) with 14 fixtures, 3 full bathrooms, using 8 fixtures simultaneously (3 showers, 3 lavatories, dishwasher and kitchen sink). The estimated gpm peak demand would be _____.

- 12 gpm
- 14 gpm
- 19 gpm
- 20 gpm
- 24 gpm

14. The maximum peak demand from the previous example is calculated using the _____ method.

- number of fixtures
- number of fixtures in use
- number and type of fixtures
- number of bathrooms
- counting number of people

Quiz 3

Pump Capacity Required in US Gallons per Minute per fixture for Public Buildings

Type of Building	Total number of fixtures						
	25 or less	26-50	51-100	101-200	201-400	401-600	Over 600
Hospital	1.00	1.00	.80	.60	.50	.45	.40
Mercantile Buildings	1.30	1.00	.80	.71	.60	.54	.48
Office Buildings	1.20	.90	.72	.65	.50	.40	.35
Schools	1.20	.85	.65	.60	.55	.45	
Hotels, Motels	.80	.60	.55	.45	.40	.35	.33
Apartment Buildings	.60	.50	.37	.30	.28	.25	.24

1. A motel off I-90 has 100 rooms with 4 fixtures/room, the estimated gpm is _____.

- 50
- 90
- 160
- 240
- none of the answers provided

2. What is the estimated 7-minute peak demand in gallons for the previous example?

- 523
- 740
- 910
- 1120
- 1680

3. A school has its own water system with 36 fixtures in the building, the estimated gpm is _____.

- 27
- 31
- 42
- 87
- none of the answers provided

4. What is the estimated 7-minute peak demand in gallons for the previous example?

- 217
- 318
- 427
- 521
- none of the answers provided

Horse, Steer	12 Gallons per day
Dry Cow	15 Gallons per day
Milking Cow	35 Gallons per day
Hog	4 Gallons per day
Sheep	2 Gallons per day
Chickens /100	6 Gallons per day
Turkeys /100	20 Gallons per day
Fire	20-60 GPM

5. A dairy farm has 150 head of milking cows, the estimated required gpd is _____.
- 510
- 793
- 4430
- 5250
- none of the answers provided

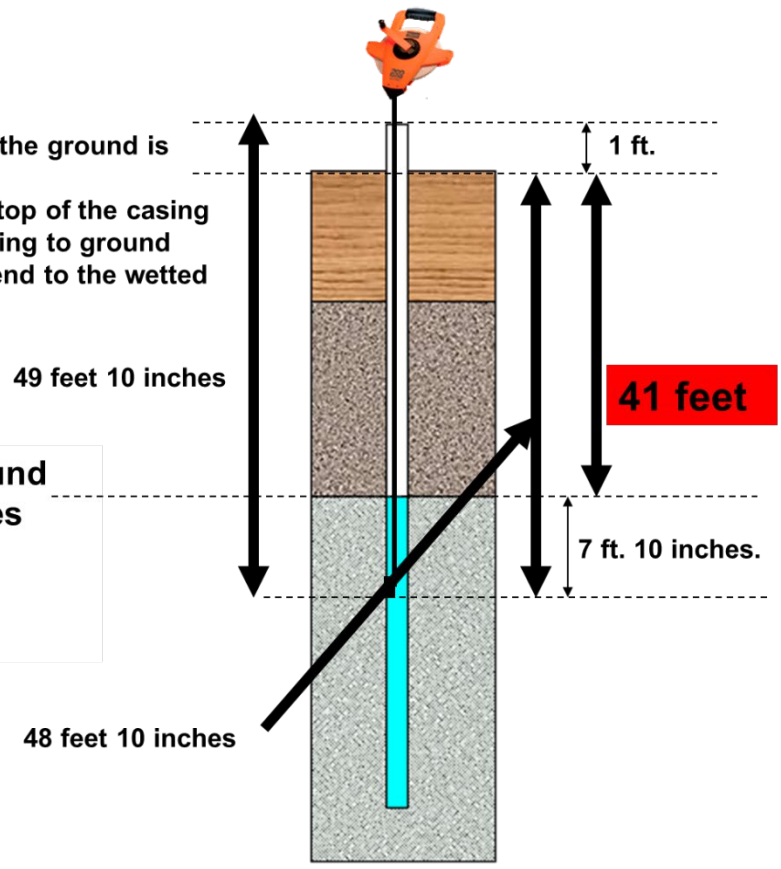
6. A farmer has 5000 chickens, the estimated required gpd is _____.
- 100
- 200
- 300
- 400
- none of the answers provided

7. A farmer raises 200 beef cattle (steers) and 20 show horses, the estimated required gpd is _____.
- 2640
- 510
- 910
- 190
- none of the answers provided

Quiz 4

Chapter 3 Water Level
Wetted Tape Method

The water level depth from the ground is found by:
the measurement from the top of the casing minus the height of the casing to ground minus the length from the end to the wetted mark



Water level below ground
= level 49 feet 10 inches
- 1 ft.
- 7 ft. 10 inches
= 41 ft.

Water level

_____ Tape reading at top of casing

_____ minus height from top of casing to ground level

_____ minus length of wetted tape

= _____ depth of water level below ground level

Ft. to water level Air Pressure Method

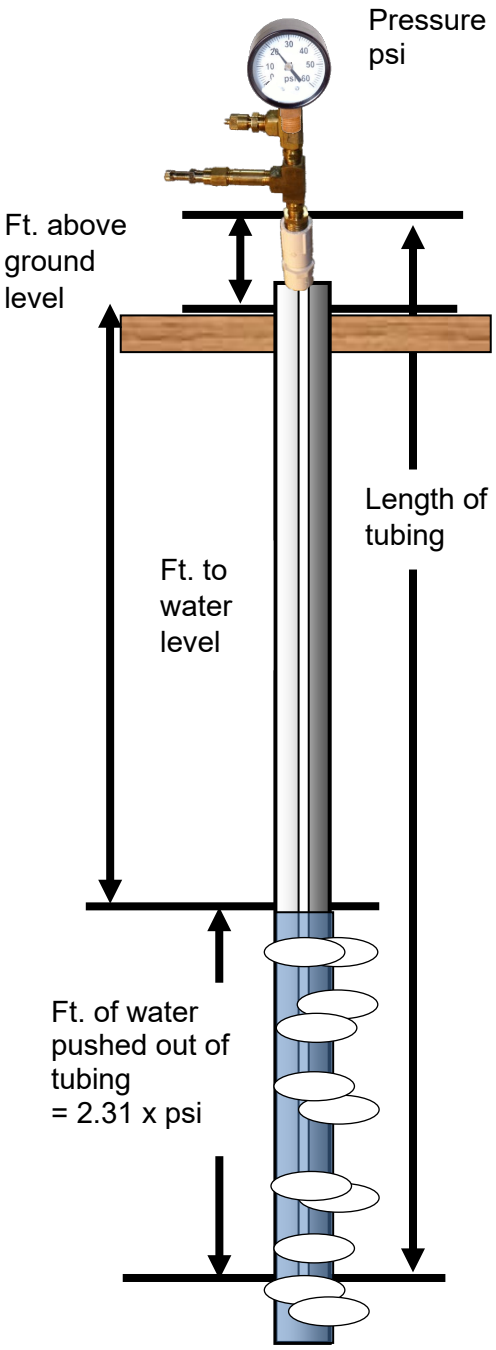
_____ Length of tubing

_____ (minus) Ft. above ground level

_____ (minus) Ft. of water out of tubing

2.31 X ____ psi)

= _____ Ft. from ground level to water level



Inches	Feet
1	0.1
2	0.2
3	0.25
4	0.3
5	0.4
6	0.5
7	0.6
8	0.7
9	0.75
10	0.8
11	0.9

Sample Calculation
Ft. to water level Air Pressure Method

100 ft. Length of tubing

-1.0 ft. (minus) Ft. above ground level

-50.8 ft. (minus) Ft. of water out of tubing
(2.31 x 22 psi)

= 100 -1.0 - 50.8 = 48.2 Ft. from ground level to water level

or 48 ft. 2 inches
Water level

_____ Tape reading at top of casing

---_____ minus height from top of casing to ground level

---_____ minus length of wetted tape

=_____ depth of water level below ground level

1. Given the following:
   72 feet 6 inches *Tape reading at top of casing*
   8 inches *Height from top of casing to ground level*
   2 feet 1-inch *Length of wetted tape*

What is the approximate distance of the water level from ground level?
- 27 feet 6 inches
- 39 feet 9 inches
- 69 feet 9 inches
- 72 feet 3 inches

Water level
_____ Tape reading at top of casing

---_____ minus height from top of casing to ground level

---_____ minus length of wetted tape

=_____ depth of water level below ground level

2. Given the following:
   91 feet 2 inches *Tape reading at top of casing*
   1 foot *Height from top of casing to ground level*
   6 feet 10 inches *Length of wetted tape*

What is the approximate distance of the water level from ground level?
- 64 feet 4 inches
- 83 feet 4 inches
- 98 feet 2 inches
- 102 feet 1 inch

Water level

_____ Tape reading at top of casing

---_____ minus height from top of casing to ground level

---_____ minus length of wetted tape

=_____ depth of water level below ground level

3. Given the following:
   36 feet 4 inches *Tape reading at top of casing*
   8 inches *Height from top of casing to ground level*
   1 feet 4 inches *Length of wetted tape*

What is the approximate distance of the water level from ground level?

- 24 feet 10 inches
- 28 feet 2 inches
- 34 feet 4 inches
- 36 feet 2 inches

Water level

_____ Tape reading at top of casing

---_____ minus height from top of casing to ground level

---_____ minus length of wetted tape

=_____ depth of water level below ground level

4. Given the following:
   22 feet 9 inches *Tape reading at top of casing*
   2 feet 1-inch *Height from top of casing to ground level*
   6 inches *Length of wetted tape*

What is the approximate distance of the water level from ground level?

- 16 feet 2 inches
- 18 feet 5 inches
- 19 feet 6 inches
- 20 feet 2 inches

Water level

_____ Tape reading at top of casing

---_____ minus height from top of casing to ground level

---_____ minus length of wetted tape

=_____ depth of water level below ground level

5. Given the following:
   59 feet 4 inches *Tape reading at top of casing*
   1 feet 2 inches *Height from top of casing to ground level*
   3 feet 4 inches *Length of wetted tape*

What is the approximate distance of the water level from ground level?

- 49 feet 4 inches
- 54 feet 10 inches
- 55 feet 9 inches
- 58 feet 2 inches

Air Pressure Method

Hint: These may be a little tricky.

Inches	Feet
1	0.1
2	0.2
3	0.25
4	0.3
5	0.4
6	0.5
7	0.6
8	0.7
9	0.75
10	0.8
11	0.9

The psi calculation will be in decimals of feet.

Convert to inches with this table.

Ft. to water level -- Air Pressure Method

_____ Length of tubing

---_____ (minus) Ft. above ground level

---_____ (minus) (2.31 X ____ psi) Ft. of water out of tubing

=_____ Ft. from ground level to water level

6. Given the following:
   100 feet *Length of tubing*
   2 feet *Above ground level*
   22 *psi of air pressure (psi x 2.31 = ____ ft.)*

What is the approximate distance of the water level from ground level?

- 22 feet 6 inches
- 41 feet 8 inches
- 47 feet 2 inches
- 96 feet 10 inches

Ft. to water level -- Air Pressure Method

_____ Length of tubing

---_____ (minus) Ft. above ground level

---_____ (minus) (2.31 X ____ psi) Ft. of water out of tubing

=_____ Ft. from ground level to water level

7. Given the following:
   150 feet *Length of tubing*
   2 feet *Above ground level*
   51 *psi of air pressure (psi x 2.31 = ____ ft.)*

What is the approximate distance of the water level from ground level?
- 18 feet
- 30 feet 2 inches
- 74 feet 10 inches
- 124 feet 9 inches

Ft. to water level -- Air Pressure Method

_____ Length of tubing

---_____ (minus) Ft. above ground level

---_____ (minus) (2.31 X ____ psi) Ft. of water out of tubing

=_____ Ft. from ground level to water level

8. Given the following:
   100 feet *Length of tubing*
   1 feet 6 inches *Above ground level*
   36 *psi of air pressure (psi x 2.31 = ____ ft.)*

What is the approximate distance of the water level from ground level?
- 15 feet 4 inches
- 22 feet 2 inches
- 65 feet 2 inches
- 89 feet 7 inches

Ft. to water level -- Air Pressure Method

_____ Length of tubing

---_____ (minus) Ft. above ground level

---_____ (minus) (2.31 X ____ psi) Ft. of water out of tubing

=_____ Ft. from ground level to water level

9. Given the following:
   200 feet *Length of tubing*
   2 feet *Above ground level*
   18 *psi of air pressure (psi x 2.31 = ____ ft.)*

What is the approximate distance of the water level from ground level?
- 22 feet 3 inches
- 84 feet 7 inches
- 121 feet 5 inches
- 156 feet 5 inches
- **Ft. to water level -- Air Pressure Method**

- **_____ Length of tubing**
- **---_____ (minus) Ft. above ground level**
- **---_____ (minus) (2.31 X ____ psi) Ft. of water out of tubing**
- **=_____ Ft. from ground level to water level**

10. Given the following:
    300 feet *Length of tubing*
    3 feet *Above ground level*
    12 *psi of air pressure (psi x 2.31 = ____ ft.)*

What is the approximate distance of the water level from ground level?

- 127 feet 2 inches
- 179 feet 3 inches
- 205 feet 6 inches
- 269 feet 4 inches

Section 2 – 430 Motors

Quiz 5

1. The motor name plate data must include the manufacturer's _____.
- name
- name and address
- name, address and website
- name, address, website and email
- name, address, website, email and phone number

2. A motor is rated to run at 230 volts. The minimum and maximum voltages the motor could safely operate at would be _____.
- 229 – 231
- 220 – 240
- 115 – 460
- 207 – 253
- none of the answers provided

3. FLA is an abbreviation meaning _____.
- Full-Load Amps
- Frequency Leading Amplitude
- False Load Application
- Fluke Leader Amp meter
- none of the answers provided

4. Hertz is a measurement of _____.
- electrical cycles per second
- peak voltage
- average voltage
- amperage in a cycle
- none of the answers provided

5. The most common phase serving a residence would be _____.
- single phase
- two or double phase
- three phase
- multiple phases
- none of the answers provided

6. RPM is the approximate speed _____.
- under full-load conditions
- when voltage is at rated value
- when frequency is at rated value
- all of the answers provided

7. The difference between synchronous speed of an induction motor and full-load speed is known as _____.
- slip
- slid
- off beat
- under performance
- none of the answers provided

8. An increase in the number of poles in a number results in _____.
- lower RPM
- higher RPM
- no change in speed since it is dependent on frequency
- no change in speed since it is dependent on load
- none of the answers provided

9. The insulation class that can tolerate higher temperature than Class B is _____.
- Class A
- Class E
- Class F
- all of the answers provided
- none of the answers provided

10. The insulation system class of most electric motors is rated for _____ hours of life.
- 5,000
- 10,000
- 15,000
- 20,000
- none of the answers provided

11. A KVA code letter indicates the _____.
- inrush current per hp.
- size of the short circuit protectors
- size of the overcurrent protectors
- size of the thermal overloads
- none of the answers provided

12. A normal-starting-torque motor would have a design letter of _____.
- A
- B
- C
- D
- E

13. A type of thermal protection device is known as a _____ device.
- manual
- single shot
- double shot
- semi-auto
- none of the answers provided

14. A UL-approved manual reset thermal protector would be _____.
- Type A
- Type C
- Type M
- Type T
- Type J

15. The service factor represents the motor's ability to handle temporary higher loads. Which of the following has the greatest margin of safety?
- 1.0
- 1.15
- 1.25
- 1.3
- 1.4

16. Generally speaking, an ECM motor is more energy efficient than a PSC motor.
- True
- False

17. An enclosure rating indicates the _____.
- temperature in which the motor is located
- degree of protection of the motor from its environment
- type of structure the motor is located
- surge protection for the motor
- all of the answers provided

Quiz 6

1. When sizing conductors for a motor, the _____ should be used in the design.
- Nameplate FLA
- FLC
- volts
- service factor
- all of the answers provided

2. A 5 hp – 230 volt – 1 PH motor is rated at _____.
- 28 FLC amps
- 18.7 FLC amps
- 2 FLC amps
- 80 FLC amps
- 100 FLC amps

3. A 3/4 hp – 208 volt – 1 PH motor is rated at _____.
- 9.8 FLC amps
- 7.6 FLC amps
- 8.0 FLC amps
- 5.4 FLC amps
- 16 FLC amps

4. A 7-1/2 hp – 208 volt – 1 PH motor is rated at _____.
- 80 FLC amps
- 44 FLC amps
- 40 FLC amps
- 50 FLC amps
- 12 FLC amps

5. A single motor FLC for designing conductor size should be increased by a multiplier of _____.
- 1.25
- 1.30
- 1.40
- 2.00
- none of the answers provided

6. Warmer ambient temperatures allow heat to be dissipated more rapidly than colder ambient temperatures.
- True
- False

7. Conductor insulation is rated at three temperatures. A conductor temperature above its rating will result in _____.
- insulation breakdown
- line-to-line shorting
- line-to-ground shorting
- all of the answers provided

8. Conductor amp capacity is decreased as the ambient air temperature is increased. A conductor with a temperature rating of 60°C that can carry 50 amps at 86°F could carry _____ at 123°F.
- 5.2 amps
- 10.7 amps
- 20.5 amps
- 39.5 amps
- none of the answers provided

9. A conductor with a temperature rating of 75°C that can carry 30 amps at 86°F could carry _____ amps at 100°F.
- 26.4 amps
- 31.2 amps
- 35.7 amps
- 54.3 amps
- none of the answers provided

10. A conductor with a temperature rating of 75°C that can carry 40 amps at 86°F could carry _____ at 90°F.
- 31.2 amps
- 37.6 amps
- 41.3 amps
- 44.2 amps
- none of the answers provided

11. If there are more than 3 wires in a bundle, it is increasingly difficult to dissipate generated heat. If the conductors will carry 50 amps individually, how many amps can be safely carried per wire if in a bundle of 10 wires?
- 20 amps
- 25 amps
- 30 amps
- 40 amps
- 120 amps

12. If the conductors will carry 30 amps individually, how many amps can be safely carried per wire if in a bundle of 5 wires?
- 17 amps
- 21 amps
- 24 amps
- 38 amps
- 54 amps

13. If the conductors will carry 20 amps individually, how many amps can be safely carried per wire if in a bundle of 25 wires?
- 7 amps
- 9 amps
- 15 amps
- 18 amps
- 19 amps

14. Components are often marked with temperature ratings. A terminal that is marked for 75°C should have a conductor with an insulation rating of at least _____.
- 60°C
- 75°C
- 90°C
- any of the answers provided
- none of the answers provided

15. A 12 AWG conductor can be used to carry a motor amp load of 25 amps at 60°C (The most accurate answer).
- True – because Table 310.15(B) allows it
- True – because the amp load does not exceed the rated ampacity of the wire
- False – because a 12 AWG will only carry 20 amps
- False – because a 12 AWG will carry 25 amps but is limited by a 20-amp breaker
- none of the answers provided

16. For a component that does not have a terminal temperature rating, a value of _____ shall be used.
- 60°C
- 75°C
- 90°C
- any of the answers provided

17. A motor with the design letter of B, C, or D shall use a terminal temperature rating of _____.
- 60°C
- 75°C
- 90°C
- any of the answers provided

18. A system has components that have terminal temperature ratings of 60°C and 75°C. The _____ should be used to determine the insulation type and the _____ should be used to determine the ampacity of the wire.
- 60°C – 60°C
- 60°C – 75°C
- 75°C – 60°C
- 75°C – 75°C

19. The grounded conductors in a system shall only use these color coded wires:
- white or natural gray
- black or red
- green or bare
- any color
- none of the answers provided

20. An equipment grounding conductor may only use these color coded wires:
- green
- green with one yellow strip
- green with more than one yellow strip
- all of the answers provided
- none of the answers provided

Quiz 7

1. A short circuit occurs when the _____.
- A. power supply exceeds rated motor voltage by more than 10%
- B. winding insulation deteriorates and allows bare conductor wires to touch each other
- C. winding insulation deteriorates and allows a bare conductor wire to touch the case or frame of the motor
- D. motor pulls higher than rated FLA
- E. answers B and C

2. Short-circuit and ground-fault protection fuse(s) should be placed _____.
- in the first conductor
- in each current-carrying conductor
- in each non-current-carrying conductor
- in conductors carrying more than 10 A
- none of the answers provided

3. Non-time-delay fuses may be used in circuits that have high inrush currents of inductive loads such as motors.
- True – if they are oversized to take high inrush current
- True – they are automatically sized for the high load
- True – the inrush current is fairly low amp draw
- False – these fuses cannot hold high inrush currents associated with motor starting
- none of the answers provided

4. The true dual-element fuse has _____.
- a distinct and separate overload element
- a distinct and separate short-circuit element
- the ability to hold 5 times its rating for 2 to 10 seconds
- an internal filler that assists in quenching arcs in the fuse
- all of the answers provided

5. The design amps for sizing short-circuit protection with a non-time-delay fuse is obtained from the _____.
- nameplate FLA
- nameplate hp. and voltage and Tables 430.248-250
- manufacturer's literature
- NEMA
- none of the answers provided

6. For a Design B motor with normal starting amps, a non-time-delay fuse is typically sized at _____ of FLC amps.
- 175%
- 225%
- 300%
- 400%
- none of the answers provided

7. For a Design B motor, a dual-element fuse is typically sized at _____ of FLC amps.
- 175%
- 225%
- 300%
- 400%
- none of the answers provided

8. For a Design B motor, a non-time-delay fuse for high-amp-starting motors may be increased to _____ of FLC amps.
- 175%
- 225%
- 300%
- 400%
- none of the answers provided

9. For a Design B motor, a dual-element fuse for high-amp-starting motors shall be increased to _____ of FLC amps.
- 175%
- 225%
- 300%
- 400%
- none of the answers provided

10. A short-circuit non-time-delay fuse for a normal amp starting (3 hp – 230 volt – 1 PH) Design B motor would be a _____ standard fuse.
- 45 A
- 50 A
- 60 A
- 70 A
- 80 A

11. A short-circuit non-time-delay fuse for a high amp starting (3 hp – 230 volt – 1 PH) Design B motor would be a _____ standard fuse.
- 45 A
- 50 A
- 60 A
- 70 A
- 80 A

12. A short-circuit dual-element fuse for a normal amp starting (3 hp – 230 volt – 1 PH) Design B motor would be a _____ standard fuse.
- 20 A
- 25 A
- 30 A
- 35 A
- 40 A

13. A short-circuit dual-element fuse for a high amp starting (3 hp – 230 volt – 1 PH) Design B motor would be a _____ standard fuse.
- 20 A
- 25 A
- 30 A
- 35 A
- 40 A

14. A short-circuit non-time-delay fuse for a normal amp starting (10 hp – 230 volt – 1 PH) Design B motor would be a _____ standard fuse.
- 125 A
- 150 A
- 175 A
- 200 A
- 225 A

15. A short-circuit non-time-delay fuse for a high amp starting (10 hp – 230 volt – 1 PH) Design B motor would be a _____ standard fuse.
- 125 A
- 150 A
- 175 A
- 200 A
- 225 A

16. A short-circuit dual-element fuse for a normal amp starting (10 hp – 230 volt – 1 PH) Design B motor would be a _____ standard fuse.
- 60 A
- 70 A
- 80 A
- 90 A
- 100 A

17. A short-circuit dual-element fuse for a high amp starting (10 hp – 230 volt – 1 PH) Design B motor would be a _____ standard fuse.
- 80 A
- 90 A
- 100 A
- 110 A
- 125 A

18. A short-circuit non-time-delay fuse for a normal amp starting (2 hp – 230 volt – 1 PH) Design B motor would be a _____ standard fuse.
- 25 A
- 30 A
- 35 A
- 40 A
- 45 A

19. A short-circuit non-time-delay fuse for a high amp starting (2 hp – 230 volt – 1 PH) Design B motor would be a _____ standard fuse.
- 25 A
- 30 A
- 35 A
- 40 A
- 45 A

20. A short-circuit dual-element fuse for a normal amp starting (2 hp – 230 volt – 1 PH) Design B motor would be a _____ standard fuse.
- 20 A
- 25 A
- 30 A
- 35 A
- 40 A

21. A short-circuit dual-element fuse for a high amp starting (2 hp – 230 volt – 1 PH) Design B motor would be a _____ standard fuse.
- 20 A
- 25 A
- 30 A
- 35 A
- 40 A

22. An inverse-time circuit breaker implies that the higher the overload, the shorter the time in which the breaker will open.
- True
- False

23. An inverse-time circuit breaker is typically sized for normal amp starting motors at _____ times FLC.
- 175%
- 225%
- 300%
- 400%
- none of the answers provided

24. An inverse-time circuit breaker is typically sized for high amp starting motors at _____ times FLC.
- 175%
- 225%
- 300%
- 400%
- none of the answers provided

25. An instantaneous-trip circuit breaker will trip from either a high amp load or from a thermal trip.
- True
- False