**Pennsylvania Mining Law**

**Section 300: Electrical Test Questions**

1. High Voltage is defined as:

a. Voltage higher than 1,200 volts

b. Voltage higher than 1,000 volts\*

c. Voltage higher than 750 volts

d. Voltage higher than 660 volts

2. Medium Voltage is defined as:

a. Voltage from 600 to 1,000 volts

b. Voltage from 661 to 1,000 volts\*

c. Voltage from 551 to 1,000 volts

d. Voltage from 676 to 1,000 volts

3. Low Voltage is defined as:

a. Voltage up to 460 volts

b. Voltage up to 550 volts

c. Voltage up to 660 volts\*

d. Voltage up to 360 volts

4. The electrical system plan shall be of sufficient size to show clearly the position of the apparatus, and the scale shall not be less than \_\_\_\_\_\_\_\_\_\_.

a. 100 feet per inch

b. 500 feet per inch\*

c. 1,000 feet per inch

d. 200 feet per inch

5. Disconnecting devices shall be locked out and suitably tagged by:

a. qualified persons

b. the individuals who perform the work\*

c. certified persons

b. the individuals who inspect the work

6. Defective equipment shall be promptly reported to \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the equipment shall not be used again until necessary repairs are made.

a. the safety department

b. a mine official\*

c. the district mine inspector

d. a certified person

7. Circuit breakers used to protect feeder circuits shall be set to trip when the current exceeds by more than \_\_\_\_\_\_\_\_\_ of the rated capacity of the feeder.

a. 25%

b. 50%\*

c. 40%

d. 75%

8. If the surface transmission lines of low voltage or medium voltage from the generating station are overhead, there shall be lightning arrestors installed at the generating station. If the distance from the generating station to the point where the line enters the mine is more than \_\_\_\_\_\_\_\_\_, an additional arrestor shall be installed at that point.

a. 250 feet

b. 500 feet\*

c. 750 feet

d. 1,000 feet

9. Overload protection shall be provided to open the circuit breaker in case of overload on any conductor. Fuses may be substituted for circuit breakers in circuits transmitting \_\_\_\_\_\_\_\_\_\_\_\_ or less.

a. 50 kilowatts

b. 75 kilowatts

c. 25 kilowatts\*

d. 15 kilowatts

10. Where the cables or feed wires, other than trolley wires, in main haulage roads cannot be kept at least \_\_\_\_\_\_\_\_\_\_\_ from any part of a mine car or locomotive, they shall be specially protected by proper guards.

a. 24 inches

b. 36 inches

c. 12 inches\*

d. 18 inches

11. All electric cables constantly kept in rooms or pillars or other work areas shall be carried on suitable supports to within \_\_\_\_\_\_\_\_\_\_ of the face of each work area.

a. 100 feet

b. 50 feet

c. 70 feet\*

d. 35 feet

12. No electrical equipment containing inflammable material shall be placed within \_\_\_\_\_\_\_\_ of a door or opening of an underground building.

a. ten feet

b. eight feet\*

c. fifteen feet

d. twenty-five feet

13. No transformer, circuit breaker, controller or other device containing more than \_\_\_\_\_\_\_\_ of inflammable liquid shall be placed in any underground substation.

a. 20 gallons\*

b. 35 gallons

c. 15 gallons

d. 50 gallons

14. All switches, circuit breakers, rheostats, fuses and instruments used in connection with underground motor-generators, rotary-converters, high-voltage motors, transformers, and low-voltage and medium-voltage motors of more than \_\_\_\_\_\_\_\_\_\_\_\_\_ shall be installed upon a suitable switchboard or in a metal-clad switchgear structure.

a. 35 horsepower or 35 KVA capacity

b. 50 horsepower or 50 KVA capacity\*

c. 25 horsepower or 25 KVA capacity

d. 60 horsepower or 60 KVA capacity

15. In underground stations where switchboards are installed, there shall be a passageway in front of the switchboard not less than \_\_\_\_\_\_\_\_\_\_\_ in width.

a. three feet\*

b. two feet

c. thirty inches

d. five feet

16. All high-voltage machines and apparatus shall be marked to clearly indicate that they are dangerous, by the use of the words "\_\_\_\_\_\_\_\_\_\_\_\_."

a. Danger, High Voltage\*

b. Electrical Hazard

c. Danger, Electrical Hazard

d. Danger, Do Not Touch

17. No individual, other than one authorized by the mine foreman or mine electrician, shall enter a station or transformer room or interfere with the working of any connected apparatus.

a. True\*

b. False

18. Rock dust or fire extinguishers suitable for extinguishing electrical fires shall be kept \_\_\_\_\_\_\_\_\_\_\_ at electrical stations and transformer rooms.

a. within twenty-five feet

b. ready for immediate use\*

c. fully charged

d. close at hand

19. The split of air ventilating a storage battery charging station may be ventilated to a belt entry when the belt entry air is not used to ventilate working faces and a hydrogen monitoring system is in place in the belt entry.

a. True

b. False\* (carbon monoxide monitoring system)

20. The presence of flammable materials are only permitted in storage battery rooms or charging stations when a sign to this effect is posted.

a. True

b. False\* (is not permitted)

21. Hand-held tools shall be restricted to a maximum of \_\_\_\_\_\_\_\_\_.

a. 250 volts

b. 300 volts\*

c. 100 volts

d. 75 volts

22. Cables for hand-held tools shall be especially rigid.

a. True

b. False\* (flexible)

23. The machine operator shall examine the exposed portion of the trailing cable for his Machine at the beginning of each shift for abrasions and other defects. The remainder of the trailing cable shall be examined within \_\_\_\_\_\_\_\_\_\_\_ upon the arrival of the producing shift in the working section.

a. the second hour

b. the first hour\*

c. thirty minutes

d. the third hour

24. A faulty cable, which have been put out of service, shall not be used again until it has been repaired and tested by:

a. a certified person

b. a mine electrician

c. a properly authorized individual\*

d. a qualified person

25. No more than \_\_\_\_\_\_\_ temporary splices shall be made in any trailing cable.

a. two

b. three

c. four

d. five\*

26. Trailing cables on equipment without a cable reel shall have no temporary splices within \_\_\_\_\_\_\_\_\_\_ of the machine before the machine is operated on the following shift.

a. 25 feet

b. 50 feet\*

c. 30 feet

d. 15 feet

27. Cables found to contain defective grounds shall be repaired before use or shall be replaced. The safety ground conductor shall have a cross-sectional area of at least \_\_\_\_\_\_\_\_ of that of a single power conductor unless used with ground trip protective systems employing ground fault current limiting devices, in which case a smaller safety ground may be used.

a. 50%\*

b. 40%

c. 25%

d. 75%

28. The \_\_\_\_\_\_\_\_\_\_\_\_ in charge of mobile electrical equipment shall not leave the equipment while it is working and shall, before leaving the work area, see that power is cut off the trailing cables.

a. authorized person

b. qualified person

c. individual\*

d. certified person

29. In working places, an approved hand-held gas detection device shall be provided for use with each machine when working. If methane gas is detected in an amount of \_\_\_\_\_\_\_\_ or greater, the individual in charge shall immediately stop the machine, cut off the current at the nearest switch and report the matter to a mine official.

a. 2.0%

b. 1.0%\*

c. 1.5%

d. 0.5%

30. No electrically operated equipment shall be in use for a period longer than \_\_\_\_\_\_\_\_\_\_\_ without a check for methane gas as required under subsection 316.

a. 10 minutes

b. 15 minutes

c. 20 minutes\*

d. 30 minutes