

2021 VA Governor's Cup Written Exam

Name _____

Team # _____

Circle One Answer

1. The amount of coal dust suspended in the mine atmosphere is most important because:

- a. it can alter the explosive range of methane
- b. it can affect the specific gravity of oxygen
- c. coal dust lowers the oxygen content in the mine atmosphere

2. A gas that is normally found near the roof or in high places in the mine is said to have a low:

- a. level of toxicity
- b. level of explosivity
- c. specific gravity

3. Atmospheric pressure and temperature are important factors because they:

- a. affect the rate of diffusion of a gas by ventilation
- b. can cause false readings on gas detection instruments
- c. lower oxygen content in the mine

4. Accumulations of hydrogen in the mine atmosphere are dangerous because hydrogen:

- a. is highly toxic
- b. is highly soluble in water
- c. is highly explosive

5. An elevated concentration of carbon dioxide in mine air can be harmful because:

- a. it is highly explosive
- b. it increases the breathing rate
- c. it is highly toxic in small concentrations

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6. The traverse method is used when:

- a. Taking a reading with a smoke tube
- b. Taking a reading with an anemometer
- c. Erecting a temporary stopping

7. Two instruments commonly used to measure velocity of airflow in a mine are:

- a. Smoke tube and CO detector
- b. Smoke tube and anemometer
- c. Anemometer and tape measure

8. If at all possible, entry into the mine should be made on:

- a. A return airway
- b. An intake airway
- c. The main haulageway

9. Barefaced exploration should be attempted only when:

- a. No breathing apparatus is available
- b. Miners are trapped in the mine
- c. A backup mine rescue team with apparatus is immediately available

10. Prior to a mine rescue team passing through a door or stopping/bulkhead behind which conditions are not definitely known, they should:

- a. Ask the Fresh Air Base to send in the backup team.
- b. Erect an air lock to prevent the mixing of atmospheres.
- c. Open the door or stopping/bulkhead, and wait at least 10 minutes so that any harmful gases are diffused.

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11. If a team member experiences problems with his or her apparatus in by the Fresh Air Base, the team member should:
- Be immediately sent back to the Fresh Air Base.
 - Be sent back to the Fresh Air Base with another team member.
 - With the entire team, return immediately to the Fresh Air Base.
12. The first indications that an explosion has occurred are often very similar to those of:
- An inundation of water
 - A large roof fall
 - A fan stoppages
13. The preferred type of hand-held extinguisher for teams is a dry chemical type that contains:
- Potassium chloride
 - Monoammonium phosphate
 - Carbon tetrachloride
14. Seals in high volatile coal seams are often placed:
- 10 feet from the fire area
 - 100 feet from the fire area
 - 1,000 feet or more from the fire area
15. Non-metallic tubes or pipes are inserted in temporary and permanent seals for the purpose of:
- Bleeding off excess pressure from the sealed area
 - Collecting air samples from the sealed area
 - Ventilating the sealed area