

Name: _____ Date: _____

Protocol 12: High-Stakes Laboratory Integrity Assessment

Demonstrate the foundational safety competencies required for advanced university-level research environments and industrial laboratory leadership.

1. Which of the following is the most appropriate action if a high-pressure gas cylinder begins to leak or tip in a senior-level lab setting?

- A. Attempt to catch the cylinder to prevent the valve from shearing off.
- B. Immediately evacuate the area and alert the designated safety officer.
- C. Lay the cylinder horizontally on the floor to stabilize it.
- D. Use a heavy-duty wrench to tighten the regulator connection manually.

2. Standard prescription eyeglasses are considered a valid substitute for OSHA-compliant safety goggles when handling volatile organic compounds.

- A. True
- B. False

3. When diluting concentrated sulfuric acid for an experiment, you should always add the _____ to the _____ to prevent exothermic splashing.

- A. Water; Acid
- B. Catalyst; Solvent
- C. Acid; Water
- D. Base; Buffer

4. What is the primary function of a SDS (Safety Data Sheet) in a 12th-grade chemistry laboratory?

- A. To provide a step-by-step procedure for performing a titration.
- B. To document the grades and attendance of students in the lab.
- C. To outline the chemical properties, hazards, and emergency response measures for a substance.
- D. To list the retail price and procurement sources for laboratory supplies.

5. A student accidentally breaks a mercury thermometer; the best course of action is to notify the instructor and use a _____ to contain the vapor.

- A. Standard broom and dustpan
- B. Specialized spill kit
- C. Paper towel with water
- D. Bunsen burner flame

6. It is acceptable to wear contact lenses under safety goggles as long as the experiment does not involve any corrosive liquids.

- A. True
- B. False

Name: _____ Date: _____

7. Before heating a test tube over an open flame, the mouth of the tube should be pointed:

- A. Directly toward your own face to observe color changes.
- B. Toward the nearest sink or drain.
- C. Away from yourself and all other students in the vicinity.
- D. Under the fume hood sash at a 90-degree angle.

8. In the event of a large chemical spill on your clothing, you should use the _____ for at least _____ minutes.

- A. Sinks; Five
- B. Safety Shower; Fifteen
- C. Eyewash; Two
- D. Fire Blanket; Ten

9. Long hair must be tied back and loose jewelry must be removed primarily to prevent physical entanglement in equipment or contact with flames.

- A. True
- B. False

10. Which of these is the correct behavior when working with a fume hood?

- A. Place all equipment as close to the front edge as possible for easy access.
- B. Keep the sash fully open at all times to maximize airflow.
- C. Keep materials at least 6 inches inside the hood to ensure proper laminar flow.
- D. Use the fume hood as a permanent storage area for hazardous waste.