Key

UNIT 1 Test B

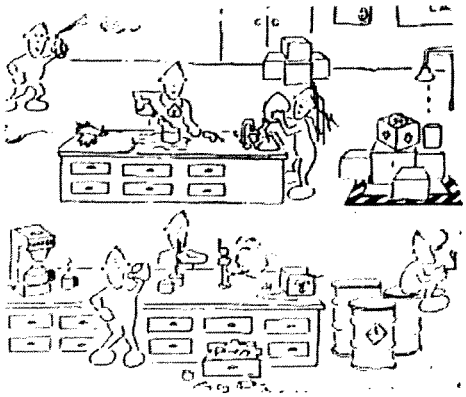
Use complete sentences and use half a page to respond to the following.

1.Describe how the scientific method is used to solve a problem (Mention all steps).

Question, Observe, Hypothesis, Experiment, Collect, Analyze, Conclusion, Results.

answer varies

2. Explain what is incorrect about this picture, and describe proper safety procedure.



Choose the Correct Letter

3. All of these procedures should be followed for lab safety except — A: 3D

A immediately reporting all dangerous activity

B putting used chemicals back in the original containers

C wearing gloves when necessary

D using eye protection as needed

4. The safest way to dilute concentrated sulfuric acid is to add —

A a series of small volumes of water to the acid while stirring

B the acid to water slowly while stirring constantly

C the acid to a small volume of water and then add more water

D dilute sulfuric acid to a small volume of the concentrated acid

A.5

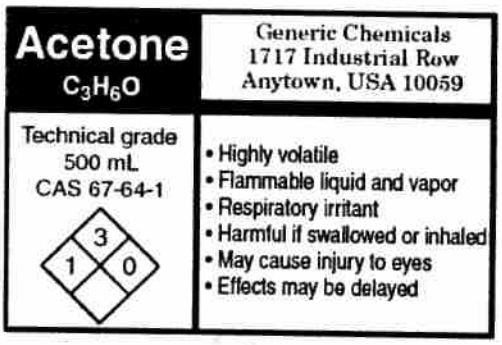
5. A science class is conducting an experiment that produces noxious fumes. Because of inadequate ventilation, some students begin to feel nauseated and dizzy. The first response should be to —

A spray the reaction with a fire extinguisher

B neutralize the acid that is reacting to produce the noxious fumes

C carry the reactants outside, away from other students

D leave the room and go to an area with fresh air



6. The label shown above contains information about some harmful effects of acetone. A group of students plans to use acetone to rinse out a glass container. A second group of students is working at the same lab table. Which of the following lab procedures should the second group of students avoid?

A Heating water with an open flame

B Pouring hydrochloric acid into a beaker

C Filtering precipitates from a liquid solution

D Collecting oxygen from plants in a test tube

Storage Compatibility Chart

"X" indicates groups are incompatible and should NOT be stored together.

Group A	Group B			
	Amines	Ammonia	Caustics	Ketones
Vinyl acetate	X	X		
Nitric acid	X	X	X	X
Sulfuric acid	X	X	X	X
Organic acid	X	X	X	

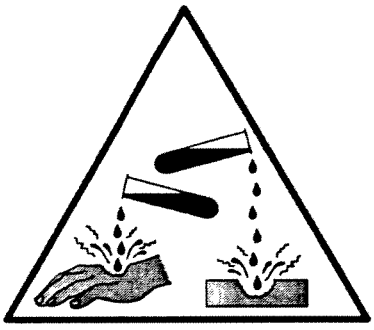
7. The chart shows the storage compatibility of a few chemicals. According to this chart, which pair of chemicals can be safely stored together?

F Vinyl acetate and amines

G Nitric acid and caustics

H Sulfuric acid and ammonia

J Organic acid and ketones



18:G

8. This picture indicates that the chemical represented is —

F pressurized

G toxic

H flammable

J corrosive

Bob = extra pic.

9. All of these procedures must be followed when using the setup shown above except —

A putting on safety goggles

B handling the beaker with tongs

C securing loose clothing

D wearing rubber gloves

10. Which of these is a hypothesis that can be tested through experimentation?

A Bacterial growth increases exponentially as temperature increases.

B A fish's ability to taste food is affected by the clarity of aquarium water.

C Tadpoles' fear of carnivorous insect larvae increases as the tadpoles age.

D The number of times a dog wags its tail indicates how content the dog is.

11. Two science students discovered that the mass of a sample of acetone in an open beaker decreased within a few minutes. One student hypothesized that the acetone reacted with oxygen to form a gaseous compound that escaped. The other student believed that the acetone evaporated into the air. What should the students do to test these hypotheses?

A Combine the hypotheses so they give valid predictions of the acetone's behavior

B Conduct a study of original papers describing the experiments leading to acetone's discovery

C Perform an experiment that attempts to identify the gas above the open beaker

D Ask a classmate's opinion about the chemical and physical properties of acetone

12. Objects of the same mass but of different sizes and shapes were dropped from a given height. Their rates of free fall were measured and recorded. Which of the following is most likely the question this experiment was designed to answer?

A How does height affect the force of gravity?

B How does gravity affect objects of different densities?

C How do mass and weight affect falling objects?

D How do size and shape affect an object's rate of free fall?

13. A ruler placed between one student's fingers and thumb is released without warning. A second student catches the ruler. The distance the ruler falls is recorded. This experiment is most likely designed to determine the —

A effects of stress on the first student's heart rate

B acceleration of the ruler during its fall

C second student's reaction time to a stimulus

D force applied on a falling mass

14. A medical researcher hypothesizes that a newly developed medication can reduce high blood pressure. Which of these would most likely be the dependent variable in a study involving this medication?

A The number of participants in the study constant

B The ages of people treated for high blood pressure with other medications constant

C The blood pressure of the participants in the study

D The number of people treated for high blood pressure with other medications X

15. Ten different types of culture media were inoculated with the same strain of bacteria and incubated at the same temperature. Nine of the cultures grew. Which of these conclusions can be drawn from this information?

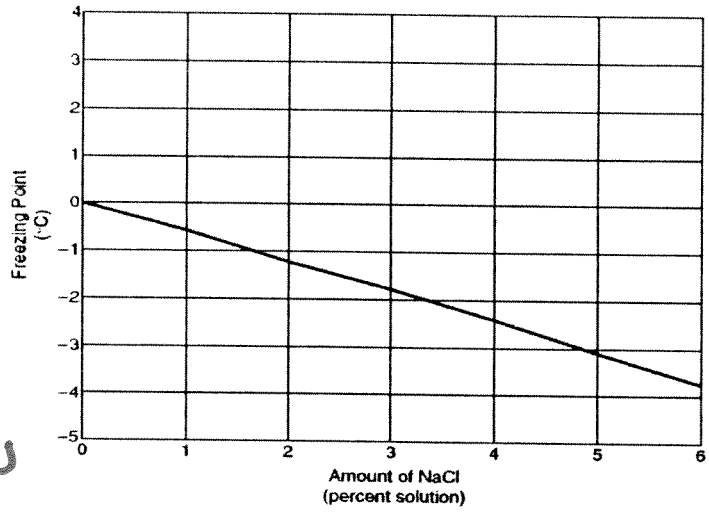
A The media used in the experiment are all capable of sustaining bacterial growth.

B The temperature varied greatly during the experiment.

C Only the culture that failed to grow bacteria was inoculated properly.

D One of the media lacked the nutrients needed for the bacteria to grow.

Effect of NaCl on Freezing Point



A: 16. C

16. Which statement is best supported by these data?

A The solution's freezing point remained constant with each increase in the amount of solute.

B The rate of freezing increased when more solute was dissolved in the solvent.

C The freezing point of the solution decreased as the amount of dissolved solute increased.

D The solution remained a liquid because more solute was added to the solvent.

17. Which set of materials would be the most appropriate to use in testing the effects of stirring on the dissolving rate of a solute?

A Flask, petri dish, metal rod, scale, magnifying glass

B Beaker, glass rod, balance, graduated cylinder, timer

C Test tube, filter paper, funnel, flask, ring stand

D Flask, Bunsen burner, ring stand, petri dish, thermometer

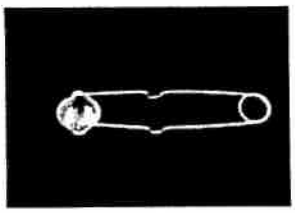
A: flintstriker

18. florence flask

19. beaker

A: florence flask

20. flint striker

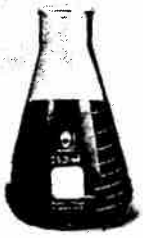


A: grad. cylinder

21. Bunsen Burner

22. grad. cylinder

A: mortar/pestle



23. erlenmeyer flask

24. test tube

A: thermometer

thermometer

25. _____

A. Test tube

Beaker Thermometer Test Tube Flint Striker Graduated Cylinder Florence Flask

Erlenmyer Flask Bunsen Burner Wire guaze Ring Stand