

9th CLASS • CHEMISTRY

CHAPTER 13

Laboratory & Practical Skills

54 High-Yield Exam-Focused MCQs
with Ticked Answers & Detailed Explanations



Annual Exam Prep

Safety Hazards

Lab Symbols

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Section 1: General Lab Rules & Introduction

1 Why should you never work alone in a chemistry laboratory?

A It is boring to work alone.

B To avoid the risk of accidents without immediate help. ✓

C The laboratory is too small.

D It is against the law.

Explanation: Working alone is dangerous because if an accident occurs (like a spill or fire), there is no one to help or call for emergency assistance.

2

What is the correct method to smell a chemical in the lab?

- A** Directly inhaling from the container.
- B** Tasting a small amount first.
- C** **Wafting the fumes or vapours towards your nose. ✓**
- D** Bringing the container very close to your nose and sniffing hard.

Explanation: Wafting allows you to safely detect the odor without inhaling concentrated, potentially toxic fumes directly into your lungs.

3

Which of the following items is strictly prohibited in the chemistry lab?

- A** Lab coat
- B** Safety goggles
- C** **Food items ✓**
- D** Closed-toe shoes

Explanation: Bringing food into the lab can lead to accidental ingestion of hazardous chemicals through contaminated hands or spills.

4

How should non-hazardous chemical waste be disposed of?

A Down the sink with running water.

B **In the regular trash bin. ✓**

C Neutralized and stored forever.

D Burned in the open.

Explanation: According to the text, non-hazardous waste can be disposed of in the sewer/trash, while hazardous waste requires special neutralization and transport to a disposal site.

5

Before using any equipment in the lab, what is the most important step?

A **Checking if it is working properly according to requirements. ✓**

B Painting it.

C Asking a friend to use it first.

D Reading the brand name.

Explanation: Checking equipment beforehand prevents accidents caused by malfunctioning tools.

6 Where should students stick to in the lab?

A The teacher's desk.

B Their work places at a safe distance from each other. ✓

C The emergency exit door.

D The chemical storage room.

Explanation: Sticking to designated workstations prevents crowding, spills, and collisions, ensuring everyone's safety.

Section 2: Flammable and Explosive Hazards

7 Which of the following is an example of an explosive chemical?

A Benzene

B **Picric acid** ✓

C Acetone

D Ether

Explanation: Picric acid, 2,4-dinitrophenyl hydrazine, and benzoyl peroxide are known explosive chemicals that release pressure, gas, and heat upon sudden shock.

8 What defines a flammable chemical?

A It has a flashpoint around room temperature. ✓

B It explodes on contact with water.

C It is always a gas.

D It has a very high boiling point.

Explanation: Flammable liquids have a flashpoint near room temperature, meaning they can easily catch fire. Examples include ethers, benzene, and petrol.

9 If you suspect a chemical is explosive, what should you do?

A Move it to a safe place immediately.

B Shake it to see if it reacts.

C Do not attempt to move the container to avoid shock. ✓

D Open the lid to release pressure.

Explanation: Moving explosive chemicals can provide the sudden shock needed to trigger an explosion, causing severe damage.

10

Which of the following should **NEVER** be stored in a refrigerator?

A Water

B **Flammable liquids** ✓

C Non-hazardous solids

D Glassware

Explanation: Refrigerators have internal lights and thermostats that can spark. Storing flammable liquids inside can cause a fire or explosion.

11

Why should flammable compounds be kept away from heat sources?

A They evaporate too quickly.

B **They can easily catch fire and cause explosions.** ✓

C They lose their chemical properties.

D They turn into solids.

Explanation: Flammable chemicals have low flashpoints; heat can easily ignite them, leading to dangerous fires.

12

Which of the following is NOT an example of a flammable chemical?

A Methylated spirit

B Petrol

C Ether

D **Picric acid ✓**

Explanation: Picric acid is classified as an *explosive* chemical, while methylated spirit, petrol, and ether are flammable chemicals.

13

When working with explosive chemicals, why should you use the smallest quantity?

A To save money.

B **To minimize the potential damage in case of an accident. ✓**

C Because they are hard to find.

D To finish the experiment faster.

Explanation: Using the smallest required quantity limits the severity of an explosion if an accident occurs.

14

If a fire starts from a flammable liquid, what should you do first?

A

Pour water on it.

B

Stay calm, alert people, and close doors to confine the fire. ✓

C

Run outside immediately without warning others.

D

Try to blow it out.

Explanation: Staying calm, alerting others, and closing doors prevents the fire from spreading while you prepare to use a fire extinguisher.

Section 3: Corrosive Hazards

15 What do corrosive chemicals do to living tissues?

A They freeze them.

B They attack and destroy them on contact. ✓

C They heal them.

D They have no effect.

Explanation: Corrosive chemicals (like acids and bases) cause severe damage to skin, eyes, and the respiratory tract on contact.

16 Which safety gear is specifically required when handling corrosive chemicals?

A Safety glasses only.

B Splash goggles and a face shield. ✓

C A simple dust mask.

D No safety gear is needed.

Explanation: Corrosive liquids can splash. Splash goggles and a face shield provide full protection for the eyes and face.

17

How should concentrated acid be mixed with water?

A Add water to acid quickly.

B **Add acid slowly to water. ✓**

C Mix them simultaneously.

D Add water to acid slowly.

Explanation: Adding water to concentrated acid is highly exothermic and can cause violent boiling and splashing. Always add acid to water slowly.

18

Where must corrosive chemicals be handled to avoid breathing vapors?

A Near an open window.

B **In a fume cupboard. ✓**

C In the middle of the lab.

D Inside a refrigerator.

Explanation: A fume cupboard safely extracts toxic and corrosive vapors away from the user's breathing zone.

19

Which of the following is an example of a corrosive chemical?

A Glacial acetic acid ✓

B Benzene

C Nitrogen

D Argon

Explanation: Glacial acetic acid, mineral acids (like HF), and caustic alkalies are classic examples of corrosive substances.

20

What should be done immediately if a corrosive chemical splashes on your skin?

A Wipe it with a dry cloth.

B Wash the affected area with soap and water and seek medical attention. ✓

C Ignore it if it doesn't hurt.

D Apply oil to the area.

Explanation: Immediate washing with soap and water dilutes and removes the corrosive substance, minimizing tissue damage before medical help arrives.

21

Which safety equipment must be available in the lab when working with corrosive chemicals?

A Fire extinguisher.

B Eye wash and emergency shower. ✓

C Sand bucket.

D Fume hood only.

Explanation: Eye wash stations and emergency showers are crucial for immediately flushing corrosive chemicals off the body in case of a spill.

Section 4: Toxic Hazards

22 Which of the following is considered a highly toxic chemical?

A Mercury ✓

B Water

C Sodium chloride

D Oxygen

Explanation: Mercury, benzene, chlorine, and hydrogen cyanide are examples of toxic chemicals that cause serious health problems.

23 How should toxic chemicals be stored?

A In any available container.

B In their original containers. ✓

C In food containers.

D In open beakers.

Explanation: Keeping toxic chemicals in their original labeled containers prevents accidental ingestion or misuse.

24

What should you do after finishing an experiment with toxic chemicals?

A Wash your hands with soap and water. ✓

B Eat a snack immediately.

C Rub your eyes.

D Leave the lab without washing.

Explanation: Washing hands thoroughly removes any residual toxic chemicals, preventing accidental ingestion or absorption.

25

Why is it important to work in a fume hood when handling toxic chemicals?

A To keep the lab cool.

B Because toxic vapors can be formed during an experiment. ✓

C To hide the smell.

D To make the experiment faster.

Explanation: Fume hoods safely ventilate toxic vapors, preventing them from being inhaled by the lab worker.

26

Which of the following is NOT a toxic chemical?

A Pesticides

B Ammonia

C Chlorine

D Helium ✓

Explanation: Helium is an inert, non-toxic gas (though it can act as an asphyxiant in high concentrations, it is not classified as a toxic chemical in this context).

27

If you think you have been exposed to a poisonous substance, what is the first step?

A Drink milk.

B Seek immediate medical aid. ✓

C Go home and sleep.

D Take an antidote without asking.

Explanation: Immediate medical attention is critical to mitigate the effects of toxic exposure.

Section 5: Reactive Chemical Hazards

28 Why are reactive chemicals considered dangerous?

A They are always liquids.

B They can cause fires and explosions if not properly handled. ✓

C They are very expensive.

D They smell bad.

Explanation: Reactive chemicals can undergo violent reactions, releasing dangerous gases or exploding when mixed or exposed to air/water.

29

Which of the following is an example of a reactive chemical?

A Sodium (Na) ✓

B Water

C Glass

D Nitrogen

Explanation: Sodium, Lithium, Calcium hydride, and azides are highly reactive chemicals that require special handling.

30

How should reactive chemicals be stored?

A Mixed with other chemicals.

B Segregated from other chemicals. ✓

C In open containers.

D Near heat sources.

Explanation: Segregation prevents accidental mixing of incompatible reactive chemicals, which could lead to fires or explosions.

31

What safety measure should be taken when performing reactions with reactive chemicals?

A Use a shield and heavy gloves. ✓

B Wear sunglasses.

C Perform the reaction in the open.

D Use plastic containers only.

Explanation: Shields protect against explosions, and heavy gloves protect hands from severe burns or cuts.

32

Why should glass equipment be wrapped with tape when handling reactive chemicals?

A To make it look nice.

B To shield against shattering in case of an explosion. ✓

C To keep it warm.

D To prevent it from rolling.

Explanation: Taping glassware contains the fragments if an explosion occurs, preventing serious injuries from flying glass.

Section 6: Radiation Hazards

33 What can high doses of radiation cause?

A Improved eyesight.

B Vomiting, radiation burns, hair loss, and radiation syndrome. ✓

C Stronger bones.

D Better appetite.

Explanation: High doses of radiation damage living tissues and organs, leading to acute radiation syndrome and burns.

34 Which type of radiation causes external injuries?

A Alpha particles

B Beta particles

C Gamma rays ✓

D Sound waves

Explanation: Gamma rays are highly penetrating and cause external injuries, whereas alpha and beta particles are more dangerous when inhaled or injected.

35

What is the primary safety rule for radioactive sources?

A Keep them unshielded.

B **Keep radioactive sources shielded. ✓**

C Touch them with bare hands.

D Store them near windows.

Explanation: Shielding (like lead or concrete) absorbs radiation and protects people from exposure.

36

Why should you avoid prolonged exposure to radiation?

A It makes you tired.

B **It accumulates in the body and damages living tissues. ✓**

C It is boring.

D It makes the lab dirty.

Explanation: The longer you are exposed, the higher the dose of radiation absorbed, increasing the risk of long-term health issues.

37

What should be worn to protect against radiation?

A A simple cotton shirt.

B **Protective clothing and a face mask. ✓**

C Sunglasses.

D A woolen sweater.

Explanation: Specialized protective clothing and masks prevent radioactive particles from coming into contact with the skin or being inhaled.

38

How can exposure to radiation be monitored?

A By using a thermometer.

B **By using badges. ✓**

C By using a barometer.

D By using a weighing scale.

Explanation: Radiation badges (dosimeters) are worn by workers to monitor and record their cumulative radiation exposure.

Section 7: Asphyxiation Hazards

39 What is asphyxiation?

A A type of poisoning from food.

B Unconsciousness or death due to suffocation. ✓

C A skin rash.

D A chemical burn.

Explanation: Asphyxiation occurs when a gas or vapor displaces oxygen, causing suffocation.

40 Which of the following is an asphyxiant chemical?

A Carbon monoxide ✓

B Hydrochloric acid

C Benzene

D Picric acid

Explanation: Carbon monoxide, hydrogen cyanide, nitrogen, and methane are examples of asphyxiants that displace oxygen in the air.

41

What is a warning sign of oxygen depletion in the air?

A

Rapid breathing, rapid heart rate, nausea, and convulsions. ✓

B

Feeling sleepy.

C

Increased appetite.

D

Improved vision.

Explanation: These are the body's emergency responses to a lack of oxygen, which can quickly lead to unconsciousness.

42

Where should asphyxiant chemicals be stored and used?

A

In a closed, unventilated room.

B

In well-ventilated areas with plenty of air. ✓

C

In a refrigerator.

D

Under a fume hood only.

Explanation: Good ventilation ensures that if a leak occurs, the gas disperses and doesn't replace the oxygen in the breathing zone.

43

What should you do if someone inhales an asphyxiant chemical?

A Leave them where they are.

B

Remove the patient from the contaminated area and call a trained person. ✓

C Give them water to drink.

D Slap them awake.

Explanation: Moving the patient to fresh air is the priority to restore oxygen supply, followed by immediate medical help.

44

Which of the following is NOT an example of an asphyxiant?

A Argon

B Helium

C Methane

D

Acetone ✓

Explanation: Acetone is a flammable liquid, while Argon, Helium, and Methane are gases that can displace oxygen and cause asphyxiation.

Section 8: Hazard Signs & Symbols

45 What does a yellow triangle with a black flame symbol indicate?

- A** Toxic hazard.
- B** **Highly flammable. ✓**
- C** Corrosive hazard.
- D** Radiation hazard.

Explanation: The flame symbol inside a yellow triangle is the universal warning for highly flammable materials.

46 What does the "Toxic Hazard" sign feature?

- A** **A skull and crossbones. ✓**
- B** A flame.
- C** A radiation trefoil.
- D** A hand being burned.

Explanation: The skull and crossbones is the standard symbol for toxic or poisonous substances.

47

What does a blue circular sign with a face mask indicate?

A Wear a face mask. ✓

B No admittance.

C Sanitize hands.

D Wear gloves.

Explanation: Blue circular signs in the lab are mandatory action signs, indicating required PPE like face masks.

48

What does the "Caution" sign generally convey?

A Immediate danger of death.

B A warning to be alert and take extra care. ✓

C The experiment is finished.

D The area is safe.

Explanation: "Caution" indicates a potential hazard that requires attention and careful behavior to avoid accidents.

49

What does a red circle with a diagonal line over a person indicate?

A

No admittance for unauthorized personnel. ✓

B

Wear a lab coat.

C

Fire exit.

D

Radiation area.

Explanation: The red prohibition symbol indicates an action that is forbidden, such as unauthorized entry.

50

What does the radiation hazard symbol look like?

A

A skull and crossbones.

B

A trefoil (three-bladed propeller). ✓

C

A flame.

D

A hand being burned by liquid.

Explanation: The trefoil symbol universally represents ionizing radiation hazards.

Section 9: PPE, Fire Extinguishers & Emergencies

51

Which of the following is NOT considered Personal Protective Equipment (PPE)?

- A Lab coat
- B Safety glasses
- C Fire extinguisher ✓
- D Face shield

Explanation: A fire extinguisher is emergency equipment, not personal protective equipment worn on the body.

52

Where should a portable fire extinguisher be located?

A Locked in a cabinet.

B

In a clearly visible and accessible location in the lab. ✓

C Outside the building.

D In the teacher's car.

Explanation: Fire extinguishers must be easily accessible to quickly control small fires before they spread.

53

What is the purpose of periodic emergency drills in the lab?

A To waste time.

B

To practically train students on how to handle emergency situations. ✓

C To test the fire extinguisher.

D To clean the lab.

Explanation: Drills ensure that students know exactly what to do and where to go during a real emergency, reducing panic.

54

In case of a chemical emergency, what should be your first action?

A Panic and run.

B **Stay calm, alert people, and follow safety procedures. ✓**

C Hide under a table.

D Try to clean it up without telling anyone.

Explanation: Staying calm and alerting others allows for an organized response, preventing further injury and containing the hazard.



Well Done!

You have completed Chapter 13



Quick Revision: Hazard & Examples

Explosive	Picric acid, 2,4-dinitrophenyl hydrazine, benzoyl peroxide
Flammable	Ethers, benzene, petrol, methylated spirit
Corrosive	Glacial acetic acid, mineral acids (HF), caustic alkalies
Toxic	Mercury, benzene, chlorine, hydrogen cyanide
Reactive	Sodium, lithium, calcium hydride, azides
Asphyxiant	Carbon monoxide, hydrogen cyanide, nitrogen, methane

Exam Tip

Pay special attention to the **specific examples** of chemicals (picric acid for explosives, mercury for toxic, and HF for corrosive) and the **correct order** of mixing acid and water. These are favorite questions for examiners!

Good luck in your annual exams!

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