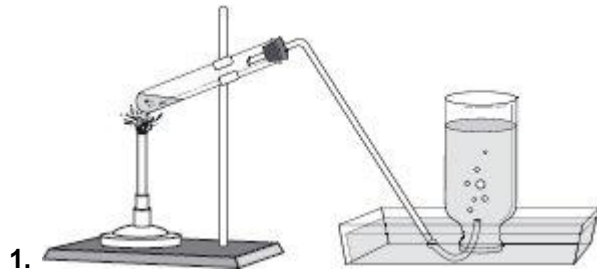


Chemistry SAT Practice Test 25



In the reaction setup shown above, which of the following are true?

I. This setup can be used to prepare a soluble gas by water displacement.

II. This setup involves a decomposition reaction if the substance heated is potassium chlorate.

III. This setup can be used to prepare an insoluble gas by water displacement.

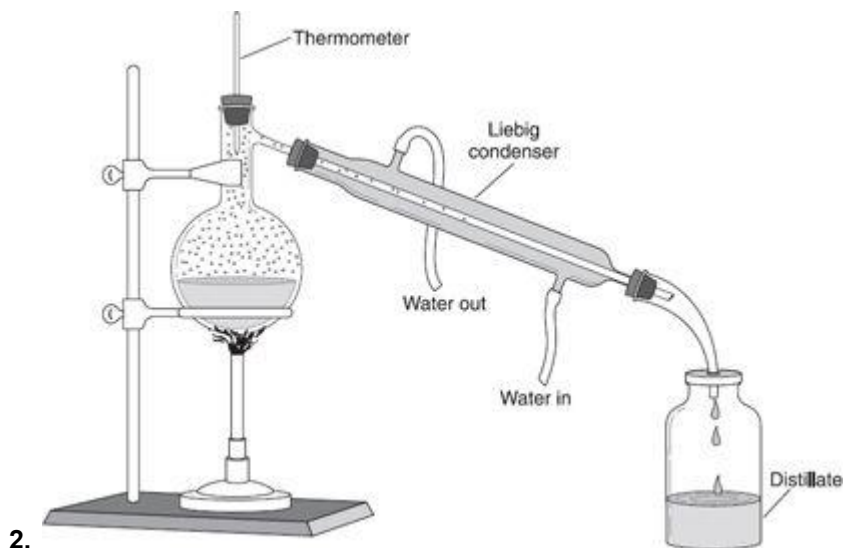
A. I only

B. II only

C. I and III

D. II and III

E. I, II, and III

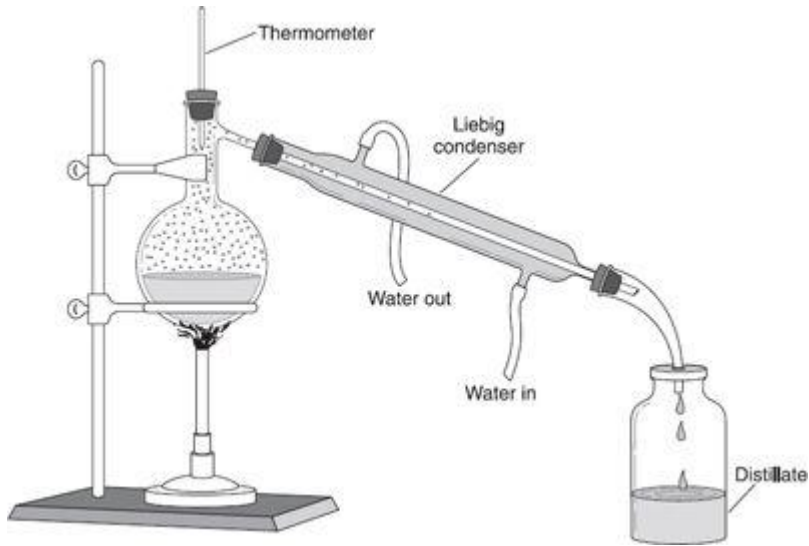


In this laboratory setup for distillation, where does the vaporization take place?

A. Around the thermometer

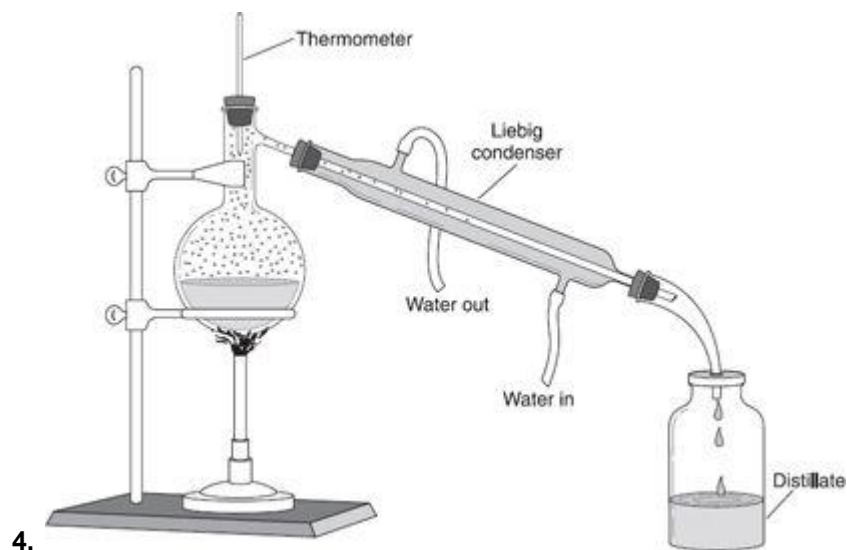
B. In the condenser

- C. In the circulating water
- D. In the heated flask
- E. In the distillate



If the liquid being distilled contains dissolved magnesium chloride, where will it be found after distillation is completed?

- A. Around the thermometer
- B. In the condenser
- C. In the circulating water
- D. In the heated flask
- E. In the distillate

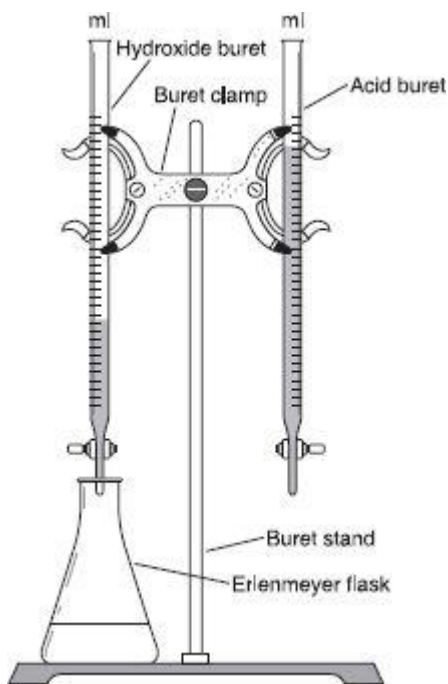


If the liquid being distilled contains dissolved ammonia gas, where will it be bound after distillation is completed?

- A. Around the thermometer
- B. In the condenser
- C. In the circulating water
- D. In the heated flask
- E. In the distillate

5. If the flame used to heat a flask is an orange color and blackens the bottom of the flask, what correction should you make to solve this problem?

- A. Move the flask farther from the flame.
- B. Move the flask closer to the flame.
- C. Allow less air into the collar of the burner.
- D. Allow more air into the collar of the burner.
- E. The problem is in the supply of the gas, and you cannot fix it.

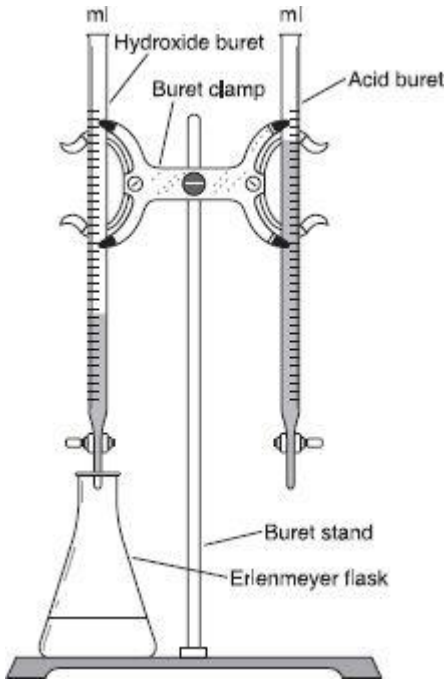


6.

In the above titration setup, if you introduce 15 mL of the NaOH with an unknown molarity into the flask and then add 5 drops of phenolphthalein indicator, what will you observe?

- A. A pinkish color will appear throughout the solution.
- B. A blue color will appear throughout the solution.

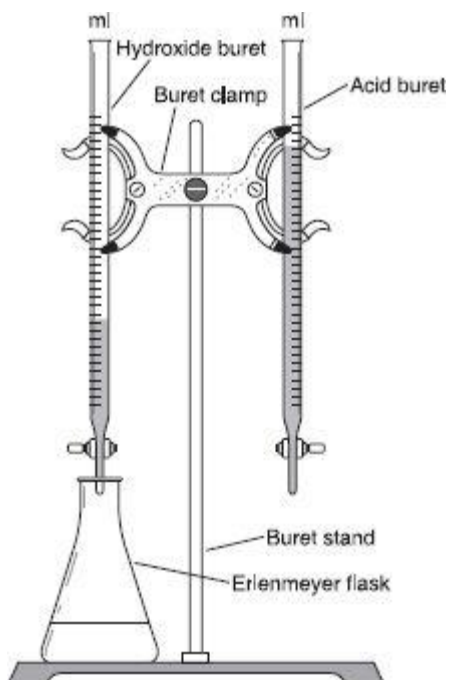
- C. There will be a temporary pinkish color that will dissipate.
- D. There will be a temporary blue color that will dissipate.
- E. There will not be a color change.



7.

If the HCl is 0.1 M standard solution and you must add 30 mL to reach the end point, what is the molarity of the NaOH?

- A. 0.1 M
- B. 0.2 M
- C. 0.3 M
- D. 1 M
- E. 2 M



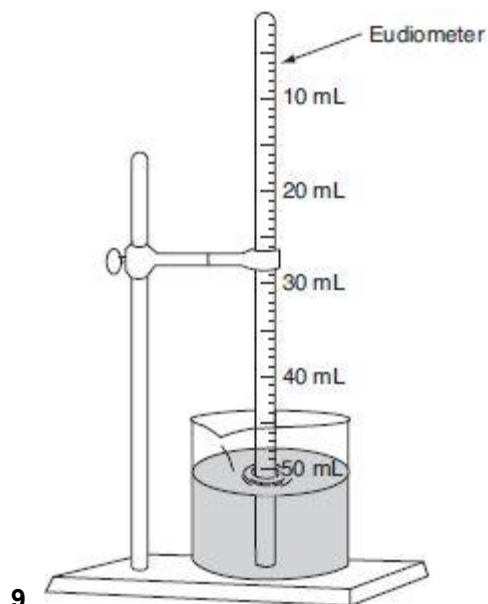
8.

When is the end point reached and the volume of the HCl recorded in this reaction?

- I. When the color first disappears and returns in the flask.
- II. When equal amounts of HCl and NaOH are in the flask.

III.

- A. I only
- B. III only
- C. I and III
- D. II and III
- E. I, II, and III



In this setup, a clean strip of magnesium with a mass of 0.040 g was introduced into the bottom of the tube, which contained a dilute solution of HCl, and allowed to react completely. The hydrogen gas formed was collected and the following data recorded:

Air pressure in the room = 730 mm Hg

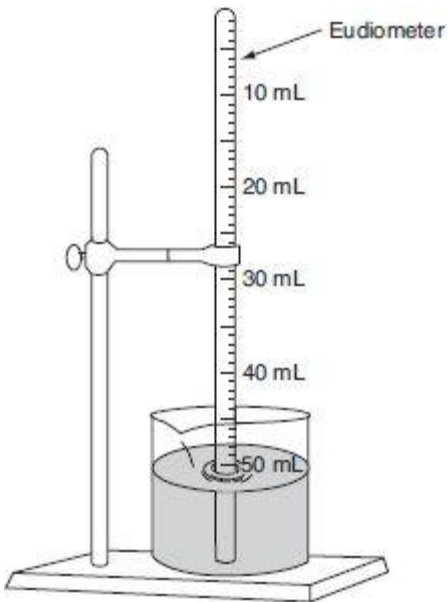
Temperature of the water solution = 302 K

Vapor pressure of water at 302 K = 30.0 mm Hg

The gas collected did not fill the eudiometer. The height of the meniscus above the level of the water was 40.8 mm.

What is the theoretical yield (in mL) at STP of hydrogen gas produced when the 0.040 g of Mg reacted completely?

- A. 10 mL
- B. 25 mL
- C. 37 mL
- D. 46 mL
- E. 51 mL



10.

In this setup, a clean strip of magnesium with a mass of 0.040 g was introduced into the bottom of the tube, which contained a dilute solution of HCl, and allowed to react completely. The hydrogen gas formed was collected and the following data recorded:

Air pressure in the room = 730 mm Hg

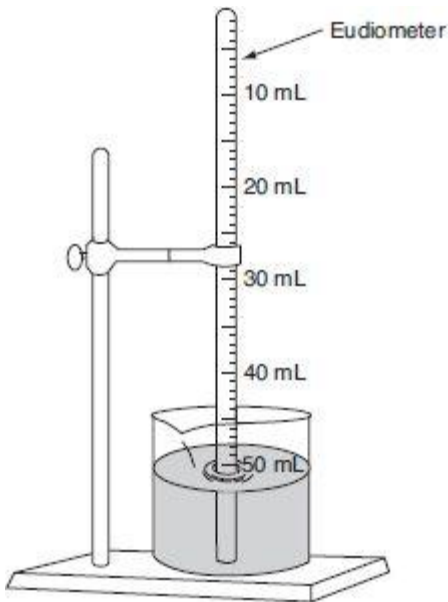
Temperature of the water solution = 302 K

Vapor pressure of water at 302 K = 30.0 mm Hg

The gas collected did not fill the eudiometer. The height of the meniscus above the level of the water was 40.8 mm.

What is the correction to the atmospheric pressure due to the 40.8 mm height of the solution in the tube and above the level in the beaker?

- A. 3.0 mm Hg
- B. 6.0 mm Hg
- C. 13.6 mm Hg
- D. 27.2 mm Hg
- E. 40.8 mm Hg



11.

In this setup, a clean strip of magnesium with a mass of 0.040 g was introduced into the bottom of the tube, which contained a dilute solution of HCl, and allowed to react completely. The hydrogen gas formed was collected and the following data recorded:

Air pressure in the room = 730 mm Hg

Temperature of the water solution = 302 K

Vapor pressure of water at 302 K = 30.0 mm Hg

The gas collected did not fill the eudiometer. The height of the meniscus above the level of the water was 40.8 mm.

What is the pressure of the collected gas once you have also corrected for the vapor pressure of the water?

- A. 730 mm Hg
- B. 727 mm Hg
- C. 30.0 mm Hg
- D. 697 mm Hg
- E. 760 mm Hg

12. Which of the above choices is the proper way to dilute a concentrated acid?

- A. The rule is to add concentrated acid to water slowly.
- B. The rule is to add water to the concentrated acid slowly.
- C. Carefully replace unused or excess chemicals into their properly labeled containers from which they came.

D. Flush eyes with water at the eyewash fountain for at least 15 minutes, and then report the accident for further help.

E. Dispose of chemicals in the proper places and following posted procedures. Do not return them to their original containers.

13. How do you properly dispose of chemicals not needed in the experiment?

A. The rule is to add concentrated acid to water slowly.

B. The rule is to add water to the concentrated acid slowly.

C. Carefully replace unused or excess chemicals into their properly labeled containers from which they came.

D. Flush eyes with water at the eyewash fountain for at least 15 minutes, and then report the accident for further help.

E. Dispose of chemicals in the proper places and following posted procedures. Do not return them to their original containers.

14. What should you do if a chemical splatters into your eye?

A. The rule is to add concentrated acid to water slowly.

B. The rule is to add water to the concentrated acid slowly.

C. Carefully replace unused or excess chemicals into their properly labeled containers from which they came.

D. Flush eyes with water at the eyewash fountain for at least 15 minutes, and then report the accident for further help.

E. Dispose of chemicals in the proper places and following posted procedures. Do not return them to their original containers.

15. What instrument is used in chemistry labs to measure the molarity of a colored solution by measuring the light transmitted through it?

A. Electronic gravimetric balance

B. pH meter

C. Spectrophotometer

D. Computer assisted probes

E. Galvanometer