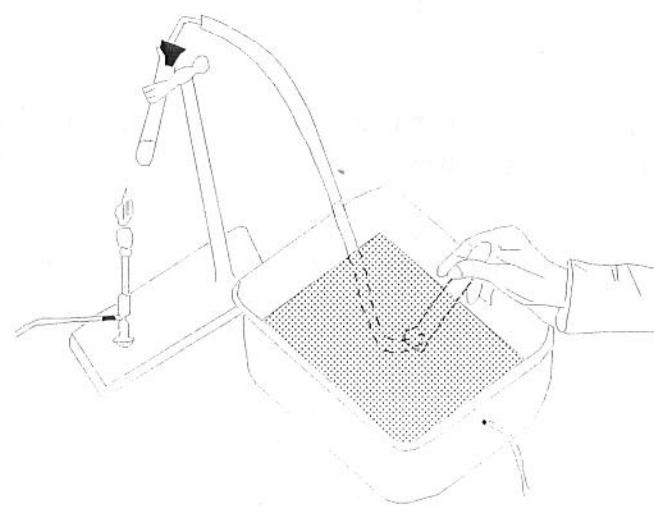


1 While at a flea market, you purchased a ring that was supposedly pure gold, Au. You want to determine experimentally whether it is real gold or not. You already know the density of pure gold.

Explain in detail **in point form** the experimental procedure you will carry out to determine whether the ring is pure gold.

*• water displacement method → but step by step in detail.
• give formula for density*

2 During an experiment, a student adds Alka-Seltzer to a test tube containing some water. He proceeds to collect the bubbles of gas produced using the apparatus shown in the diagram below:



The student is told that the gas collected is either oxygen, hydrogen or carbon dioxide. Following two tests with a burning splint placed in the gas, the splint is extinguished both times.

- a) Predict the nature of the gas and justify it. *(CO₂)*
- b) State another characteristic property of the gas that could be used to identify it in the lab. *(LST)*

3 During a laboratory experiment, you collected three test tubes of a gas which may be one of the following: carbon dioxide, CO₂; oxygen gas, O₂, or hydrogen gas, H₂.

Use a chart to indicate the experimental procedures you should use to identify this gas. *(See your notes)*

- | | | | |
|------|-----------|----------------------------|-------|
| 4) B | 9) D | 14) CC, PC, PC, CC | 19) D |
| 5) A | 10) iron | 15) CC, PC, CC, PC, CC, PC | 20) 3 |
| 6) C | 11) argon | 16) B | 21) A |
| 7) B | 12) - | 17) C | 22) C |
| 8) D | 13) D | 18) 1, 2, 5 + 9 = CC | 23) C |