

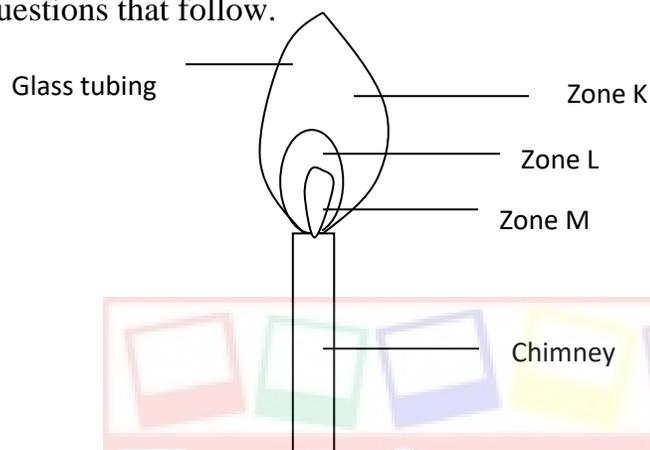
1. Define the term Chemistry. (1 mk)

It is the systematic study of chemical substances.

2. State the major differences between the particles of solids and those of gases. (4 mks)

- **Solids have fixed shape while gases have no fixed shape. (2 mks)**
- **Solids have a fixed volume while gases have no fixed volume.**

3. The diagram alongside shows a non-luminous Bunsen flame (burner). Study it and answer the questions that follow. (3 mks)



- (a) Name the labeled zones based on colour

- J – Blue zone**
- K – Greenish-blue zone**
- M – Colourless zone**

- (b) Which is the hottest part of the flame? Give a reason for your answer. (2 mks)

- **Zone K**
- **Gas burns completely and rapidly here.**

- (c) State what would happen if a wooden alighted, splint is placed at the free end of the glass tubing. Explain. (2 mks)

- **Nothing – The gases in zone K completely burns out.**

- (d) Why is this flame preferred to a luminous flame for heating purposes? (1 mk)

- **It is hot and clean while aluminous flame is not hot enough and is sooty(dirty).**

- (e) Should the air hole be open or closed to produce this flame? Explain.(2 mks)

- **Open**
- **This provided entry for air which is necessary for combustion of the air.**

- (f) A match-stick head placed in zone M will not ignite. Explain. (2 mks)

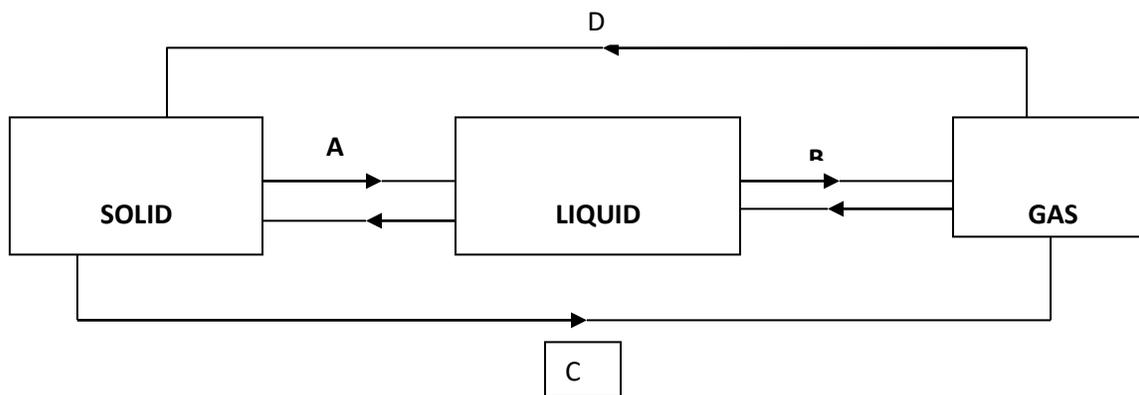
- Zone M consists of unburnt gases and is therefore not hot.

4. Give a reason why a candle flame is not suitable for heating in the laboratory. (2 mks)
 - It is not hot enough
 - It is sooty
5. Besides a bunsen burner flame, name one other apparatus that can be used conveniently for heating in the laboratory. (1 mk)
 - Spirit lamp
6. Draw and name 4 common apparatus used in a chemistry laboratory. (4 mks)

(a)	(b)
(c)	(d)

7. State five laboratory rules observed in a Chemistry laboratory. (5 mks)
 - Proper dressing
 - Switching off all gas outlets/tap when not in use
 - Following all the instructions from technicians
 - Handling instruments with great care.
 - Opening all windows/doors when experiment is on.

8. Identify the processes involved in the diagram below. (2 mks)



- A – Melting (½ mk)
- B – Vaporisation/evaporation (½ mk)
- C – Deposition (½ mk)
- D - Sublimation (½ mk)

9. Name one career opportunity in Chemistry. (1 mk)

- **Medicine**
- **Pharmacy**
- **Nursing**

10. (a) What is drug abuse? (1 mk)
 - **Using a drug for a wrong purpose**
- (b) What is a drug? (1 mk)
 - **Is any substance, natural or manufactured which when used alters the way the body functions.**
11. Explain why most laboratory apparatus are made of glass. (2 mks)
 - **Transparent, can see through**
 - **Do not react with most substances/chemicals**
12. State four applications of paper chromatography. (4 mks)
 - **In sports, used to identify banned substances**
 - **In the pharmaceutical industry, to test the purity of drugs**
 - **In food industry, to identify contaminants in food and drinks.**
 - **In cosmetic industry, to identify harmful substances.**
13. State four characteristics of temperal physical changes. (4 mks)
 - **Are easily reversible**
 - **No new substance formed**
 - **Mass of substance remains the same**
 - **Not accompanied by heat**
14. Define each of the following terms: (4 mks)
 (a) Atom – **Smallest part of an element that takes part in a chemical reaction.**
 (b) Element – **Pure substance that cannot be split into simple substance.**
 (c) Compound – **Pure substance composed of 2 or more elements chemically combine.**
 (d) Molecule – **Group of elements chemically combined together.**
15. Name the elements present in:- (4 mks)
 (a) Sodium bromide – **Sodium bromide**
 (b) Zinc sulphide – **Zinc sulphur**
 (c) Magnesium nitride – **Magnesium Nitrogen**
 (d) Potassium iodide – **Potassium, Iodine**