**NAME:…………………………………………………………..ADM:…………………..CLASS:……………**

**TEACHER.CO.KE**

**CHEMISTRY**

**FORM 3**

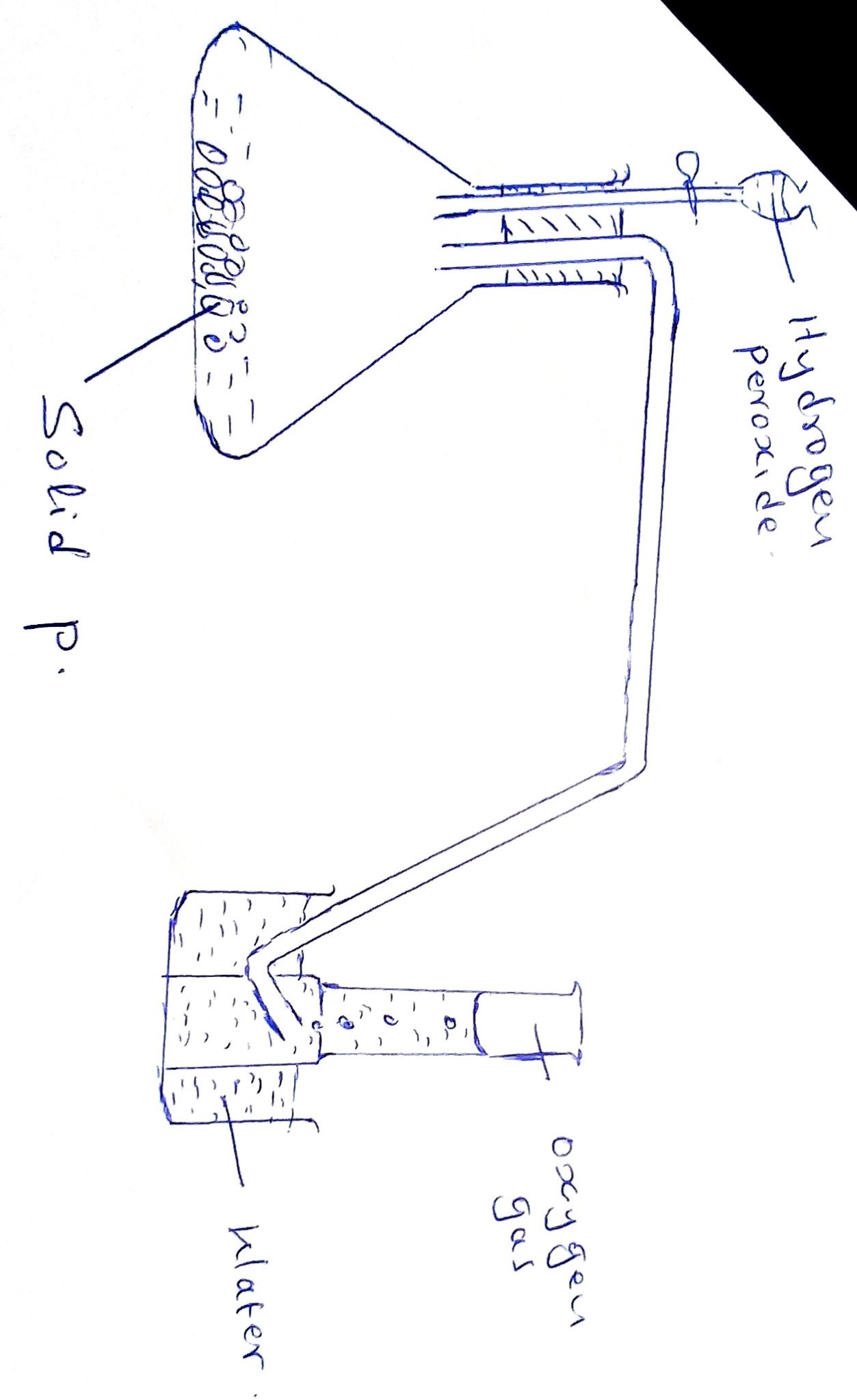
**OPENER EXAM TERM 1, 2022**

**TIME: 1hr 45 min**

**MARKS: 70 marks**

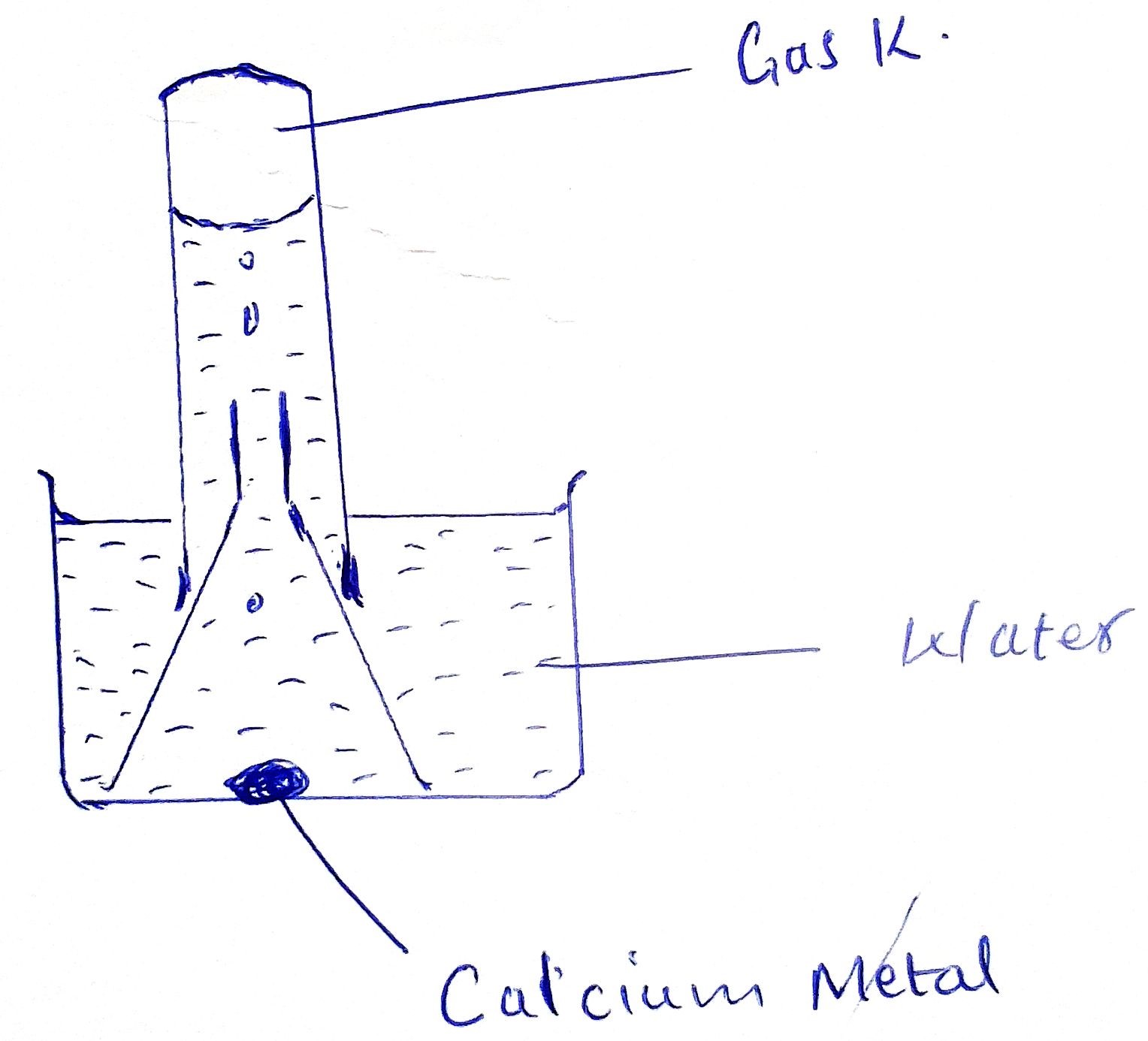
1. State the types of change that take place in each of the following situations.
2. Burning a piece of charcoal
3. Heating copper (ii) carbonate strongly. (1mk)
4. Heating Zinc (II) Oxide strongly. (1mk)

1. Name another gas which is used with Oxygen in welding. (1mk)



1. The diagram below is a set – up for the Laboratory preparation of Oxygen gas.
2. Name solid P. (1mk)
3. Write an equation for the reaction that takes place in the conical flask. (2mks)

1. Give two commercial uses of Oxygen. (2mk)
2. State two reasons why hydrogen is not commonly used as fuel. (2mks)
3. The figure shows a set – up by a form three student to prepare a certain gas.



1. Write an equation for the formation of gas K. (2mks)
2. Give one use of gas K in the industries. (1mk)
3. Give one use of the resulting solution after the metal has reacted. (1mk)
4. Outline the differences between luminous and non-luminous kinds of the flames. (2mk)
5. (a) What are acid-base indicators? (1mk)

**(b)** Outline the advantages of the universal indicator over the other acid – base indicators. (2mks)

1. (a) State Charles law? (1mk)

**(b)** Explain why motor vehicle tyres should not be inflated hard during the dry season if the vehicle is to be driven over a long distance during the day. (2mks)

**(c)**  A gas occupies 450cm3 at 27oC. What volume would the gas occupy at 1770C; if pressure remains constant?? (3mk)

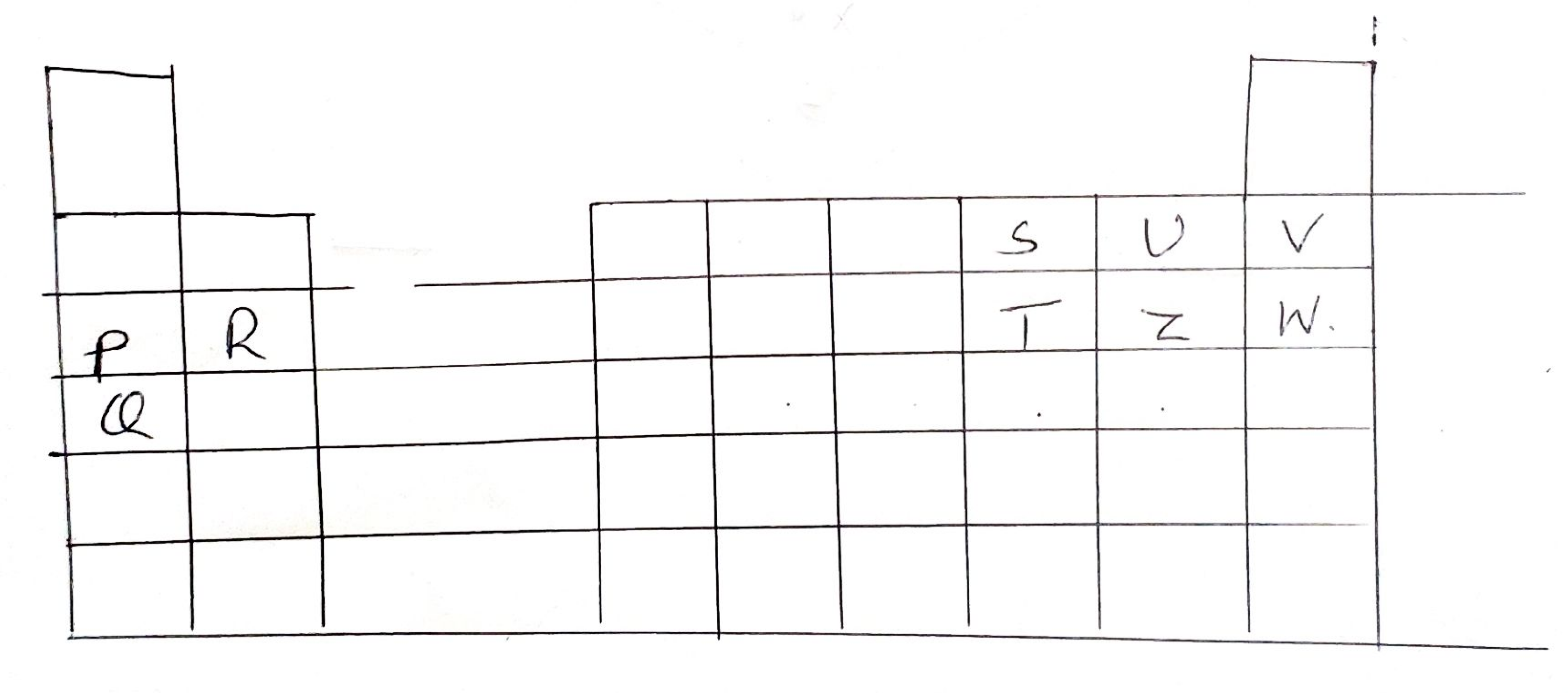
1. Convert the temperature below to the absolute scale.
2. 0oC (1mk)
3. 50oC (1mk)
4. -30oC

**(1mk)**

1. State boyle’s law of gases? (2mk)
2. Describe how a solid sample of lead (II) Sulphate would be prepared using the following reagents.

* Sodium Sulphate (3mks)
* Nitric (V) acid
* Solid lead (II) Carbonate

1. In the manufacture of Sodium Carbonate by Solvay process, ammoniated brine trickles down the carbonator while carbon (VI) oxide rise up the same tower.
2. What is ammoniated brine? (1mk)
3. What is the main source of carbon (IV) Oxide in the above process? (1mk)
4. Write two equation for the reactions in the Carbonator (2mks)
5. Using dots (.) and Cross (x) to represent electrons draw diagram to represent.
6. NH4+ (2mks)
7. Mg2N3  (2mks)
8. The grid below shows part of the periodic table, use it to answer the questions follow. The letters do not represent actual symbol of elements.



1. Identify the families name to which element shown below. Belongs.
2. P and Q . (1mk)
3. R (1mk)
4. U (1mk)
5. (i) Which element is highly reactive metal? Explain 2mks)

(ii)Select the element which is highly reactive non-metal. Explain (2mks)

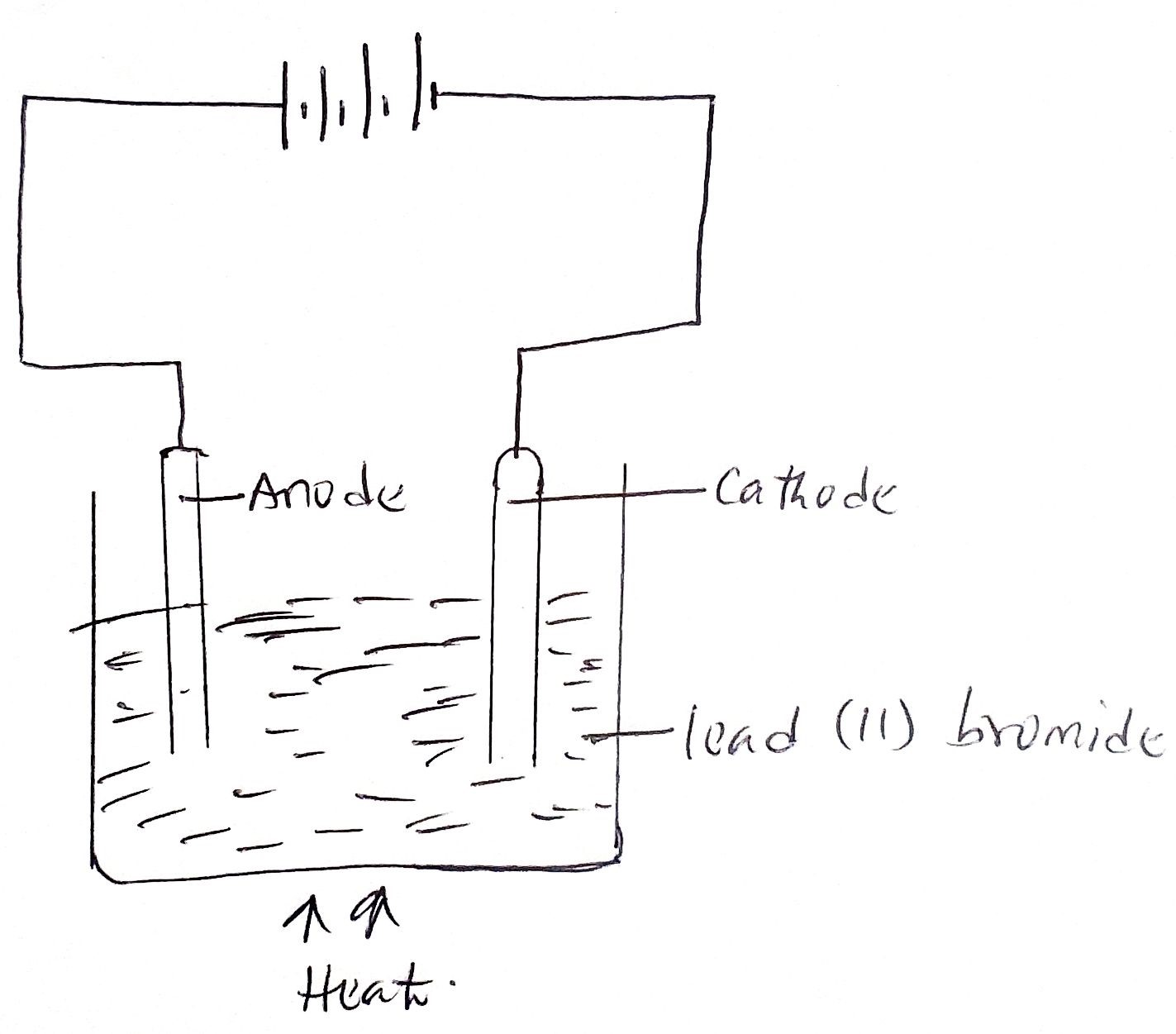
**(ii)**Which of the elements has the highest atomic radius? Explain (2mks)

1. Give electron configuration of
2. Element S (1mk)
3. Element Q (1mk)
4. Compare the atomic radius of P and R. Explain. (2mks)
5. Write down the formula of the compounds formed between (2mks)
6. Element P and S
7. Element R and T
8. Name the type of bonding and structure found in.
9. Ice (2mks)
10. Magnesium Chloride. (2mks)

Bonding –

Structure –

1. Explain the following observations.
2. Nacl allow electric current to pass through it in a molten state. (1mk)
3. Graphite is a non-metal yet it is a conductor of electricity. (1mk)
4. a form 2 students electrolyzed lead (II) bromide in a fume cupboard using the apparatus shown below.
5. Why is heat needed for this electrolysis? (2mks)



1. Suggest the name of a substance that could be used for the electrodes. (1mk)
2. State the name of the products of electrolysis at (2mks)
3. The anode –
4. The cathode**-**
5. Element A, B, C and D are not actual symbols, have atomic number 19, 9, 12 and 10 respectively.
6. Which two elements represent non- metals (1mk)
7. Write down the formula of the compound formed between elements B and C and identify the bond present in the compound. 2mks)