QUESTION 1

Some reactions of metals W,X,Y and Z are given below.

|  |  |  |
| --- | --- | --- |
| METAL | REACTION WITH WATER | REACTION WITHDILUTE HYDROCHLORIC ACID |
| W | A few bubbles from slowly in cold water. | Vigorous reaction. Gas given off  |
| X | Vigorous reactions. Metals melts. Gas given off. | Explosive reaction should not be attempted. |
| Y | No reaction | No reaction |
| Z | Does not react with cold water. Hot metal reacts with steam | Steady fizzing  |

(a) arrange these metals in order of reacting.

 Most reactive…………………………………………………….[1]

 Least reactive…………………………………………………….[1]

(b) which of these metals could be

(i) Magnesium…………………………………………………………[2]

(ii) Copper……………………………………………………………….[2]

(c) the equation for the reaction of X with cold water is given below.

 2X(s)+2H2O→2XOH(aq)+H2(g)

 (i) Describe the test you would use to show that the gas evolved is hydrogen…………………..[2]

 (ii) How could you show that the water contained a compound of the type XOH………………[2]

 (iii) In which group of the periodic table does metal X belong?..............................................[2]

(iv) The ore of X is its Chloride. Suggest how metal X could be extracted from its Chloride?[2]

QUESTION 2

Some reactions of metals W,X,Y and Z are given below.

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| X | Vigorous reactions. Metals melts. Gas given off. | Explosive reaction should not be attempted. |
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QUESTION 3

1. (a) Transverse waves are produced in a long rope by securing one end of the rope to a wall and

 then moving the other end from side to side by hand. The frequency of the wave is 2Hz.

 (i) What does the term ‘transverse’ mean? [1]

 (ii) Explain the meaning of the expression ‘ the frequency is 2Hz ’ [2]

 (iii)What is determines the amplitude of the waves produced? [1]

 (b) Explain what is meant by the refraction of light and state the conditions needed for refraction

 to take place. [4]

 (c) The figure below shows a ray of light KLMN passing through a triangular prism QRS.

 S

 K N

 Q R

 (i) Using a protractor, measure and record the angle of incidence and the angle of refraction at a

point L. [1]

 (ii) Measure and record the angle of incidence and the angle of refraction at the point M. [1]

QUESTION 4

1. A green plant was discovered to have leaves with patches of whitish and green colours.

1. What name is given to one of these leaves?
2. What chemical element would enable the whitish patches to become autotrapic?
3. One of the leaves is given to a grade eight pupil to perform Iodine test on it. Describe what the observations would be and give reasons to such results.
4. Briefly describe how a combination of environmental factors would maximize the rate of oxygen production in a flowering plan.

2 (a) What kind of climate and weather conditions do you think

 will cause a high rate of transpiration?

(b) What would happen to the leaves of a plant which was

 losing water by transpiration faster than it was taking it

 up from the roots?

(c ) What other parts of a plant might transpire?

 (d) Describe an experiment you would make to show that a

 Shoot left in an open place loses water by transpiration.

**===========================END=====================**