

Marking Scheme for  
**THE PREPARATION OF OXYGEN FROM HYDROGEN PEROXIDE AND POTASSIUM IODIDE**

Maximum = 9

(1) Proper layout

**PURPOSE:** to prepare oxygen gas and observe some of its properties.

**METHOD:** See Lab handout sheet

**APPARATUS:** See Lab handout sheet

**OBSERVATIONS:**

- (1/2) • When the colourless hydrogen peroxide was mixed with the white potassium iodide in the flask, bubbles of gas started to form immediately and the mixture became a clear yellow-brown colour.
- (1/2) • The water in the inverted test tube was displaced by a colourless gas.
- (1/2) • When a glowing splint of wood was inserted into the test tube, the wood burst into flame but no sound was made.
- (1/2) • The oxygen in a test tube had no smell.
- (1/2) • When water was sprayed into a flask full of oxygen, no change was observed.
- (1/2) • When water was sprayed into a flask full of ammonia, water was immediately sucked into the flask.

**CONCLUSIONS:**

**A. Summarize all the properties of oxygen gas that you observed (appearance, smell, effect on a glowing splint, ability to dissolve in water).**

- (1) Oxygen is a colourless, odourless gas that supports combustion and is much less soluble in water than ammonia.

**B. How could you use the results of this experiment to help decide if an unknown gas was or was not oxygen?**

- (1) If an unknown gas was colourless and odourless and supported combustion and was not very soluble in water, then the unknown gas could be oxygen.

**QUESTIONS:**

- What was the reaction that generated the oxygen?
- What caused the yellow colour to form?
- What other reactions will create oxygen?
- Could this reaction be altered to create other gases?
- Why is oxygen not very soluble in water? Does oxygen dissolve in other liquids?
- Are there other gases that support combustion?
- Does any gas besides oxygen have the set of properties that we recorded?
- Does oxygen actually have a smell?

- (3) 3 = more than 5 questions and at least one creative question  
2.5 = more than 5 questions, none creative  
2 = 3 - 5 questions and at least one creative question  
1.5 = 3 - 5 questions, none creative  
1 = 1 -2 questions  
0 = no questions  
**+1/2 bonus** if 2 or more creative questions