



# CHEMISTRY

## BOOKS - V PUBLICATION

### NON - METALS

#### Question Bank

1. Some chemicals are given in the box. Find out and write down the chemicals needed to prepare oxygen and hydrogen in the laboratory.

[Sulphuric acid, Hydrochloric acid, sodium nitrite,

Zinc, Potassium permanganate, Ammonium chloride, water]



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2. Find out to which gases are the following statements related?

- a) The gas which is combustible and is formed through the electrolysis of water.
- b) The gas is used for water purification.
- c) The element is inevitable for growth.
- d) The gas formed by the thermal decomposition of  $KMnO_4$ .



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3. a) What are the chemicals used for the preparation of chlorine in the laboratory?
- b) Why is the chlorine passed through sulphuric acid during its preparation?
- c) How is bleaching powder prepared?
- d) Which is the gas coming out from bleaching powder in the presence of water?



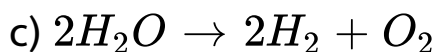
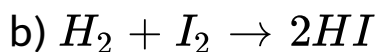
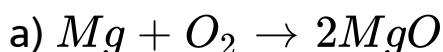
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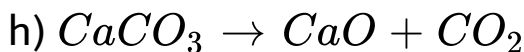
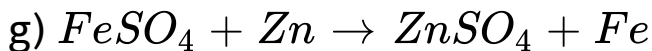
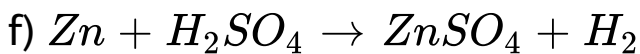
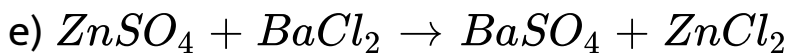
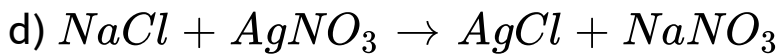
4. "We should avoid chemical fertilizers completely and promote the use of organic fertilisers ." Do you agree with this statement? Substantiate your answer.



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5. Classify the given chemical reactions into combination, displacement, decomposition and double displacement reaction.





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6. Conduct a discussion on how nitrogen cycle benefits plants and animals.



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7. Conduct a seminar on "Ozone Depletion and its solutions".



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8. Take 5mL of hydrogen peroxide ('H<sub>2</sub>O<sub>2</sub>') solution in a test tube. Add a little manganese dioxide to it. Bring a burning matchstick in to the test tube. What do you observe? Find reason for your observation?



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9. ....is inevitable for growth and sustenance of living organisms.



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10. Find the relation and fill them suitably:

Oxygen: for respiration

.....:for bleaching



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11. What is the colour of nitrogen gas?





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12. The chief ingredients of chemical fertilisers are.....



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13. ....is used for the production of electricity by the reaction between oxygen and hydrogen under specific conditions.



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14. The gas liberated when manganese dioxide heated with concentrated hydrochloric acid.

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15. The condition needed in bleaching action of chlorine.

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16. The gas obtained when zinc react with water is.....

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17. The gas obtained when chlorine react with water is .....



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18. The reactants used to produce chlorine in the laboratory are ..... And concentrated hydrochloric acid.



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19. ....is the protective covering of the earth.



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20. Ozone is mainly found in the .....



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21. The bacteria called .....living in the roots of some plants like beans can directly absorb nitrogen from the atmosphere.



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**22.** The element found more on earth.



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**23.** The density of hydrogen is .....than air



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**24.** A gas was formed when zinc reacted with dilute hydrochloric acid.

a) A pop sound was heard when a burning match stick introduced at the mouth of the test tube.

What is the reason for that?

b) When a balloon was filled with the gas above and released, it moves upwards. What could be the reason for this?



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**25.** Find the odd one and give reason:

a) Compost, Ammonia, Urea, Factumphose

b)  $CO_2$ ,  $H_2O$ ,  $HCl$ ,  $NO$



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**26.** A burning candle kept on the table is covered with a glass tumbler.

a) What could be observed?

b) What is the reason for this?



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**27.** a) Write a method of preparation of hydrogen in laboratory.

b) How will you identify the presence of hydrogen?



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**28. a)** Some chemicals are given in the box .find out the substances required for the preparation of nitrogen in laboratory.

b) Write the chemical equation for this experiment.

[Hydrochloric acid, Sodium nitrate, zinc, potassium permanganate, Ammonium chloride, water]



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**29.** If hydrogen is used as a fuel, environmental pollution can be overcome, justify your answer.



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**30.** Bleaching powder is used as for purification of water.

a) Why is bleaching powder used for such puposes?

b) How is bleaching powder made?



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**31.** a) Which are the reactants used in the preparation of hydrogen in laboratory?

b) Write down the chemical equation of the reaction taking place here.



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**32.** Mention two advantages of organic fertilisers.



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**33.** The molecules of hydrogen and oxygen combined to form the new substance water.

a) Write the combination reaction.

b) Write two examples for the reaction.



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**34.** In the laboratory preparation of chlorine ,

a) Why chlorine gas is passed through the water?

b) Chlorine is collected by the upward displacement of air in the jar. Which property is behind this?



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35. Oxygen is prepared by heating of potassium permanganate.

a) Write the chemical equation

b) How is oxygen prepared industrially

c) Write 2 uses of oxygen.



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**36.**  $O$ ,  $O_2$ ,  $O_3$

Various forms of oxygen are given above.

- a) Which among these forms is not found in nature?
- b) Which is the component that is known as a life supporter and contributes 21% of the atmosphere?
- c) Which form is seen as a separate layer in the topmost portion of the atmosphere called as stratosphere?



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**37.** Take a small quantity of sulphur in a spatula and burn it.

a) Which smell that comes from it?

b) Why?

c) What is the common name of this process and explain?



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**38.** A product of industrial importance is prepared by passing a gas with greenish yellow colour and pungent smell.

a) which is the gas

b) Which is product

c) Write any one advantage.



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**39.** When potassium permanganate is heated strongly, oxygen gas is liberated.

- a) Suggest a method to identify oxygen gas?
- b) Give any other method to prepare oxygen gas.
- c) Write down the chemical equation of the reaction of carbon and sulphur with oxygen.



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**40.** Ozone layer ensures the protection of living beings from dangerous ultraviolet coming out of

sun.

a) Write down the molecular formula.

b) How is ozone formed in the atmosphere?



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**41.** a) Which are the chemicals required for the preparation of chlorine in the laboratory?

b) Write down the chemical equation of the reaction taking here.

c) Mention any two uses of chlorine.



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**42.** The element is essential for the growth of plants.

a) Suggest any two methods in which soil gets nitrogen.

b) Mention any two uses of nitrogen.

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**43.** a) It is said that lightning is a blessing for plants.

What could be the reason?

b) How prepare nitrogen in industrially?

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**44.** Find the gases for which the following statements are related:

a) Burns explosively in air.

b) Gas used for the purification of water.

c) Gas interacting with the rhizobium bacteria in the soil.

d) Gas formed by the thermal decomposition of  $KMnO_4$



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**45.** Given below are certain uses of chlorine, oxygen, nitrogen and hydrogen. Relate each to the



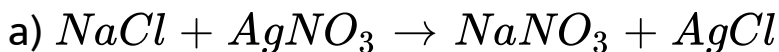
corresponding element.

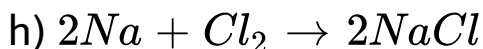
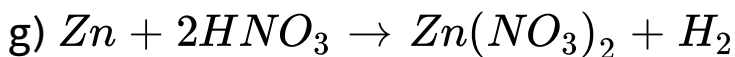
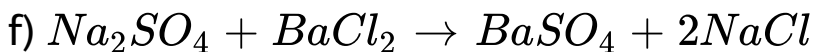
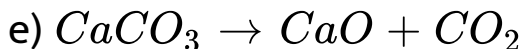
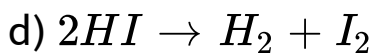
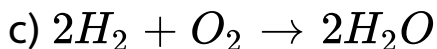
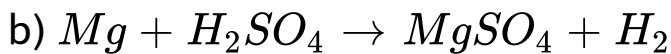
- a) Manufacture of insecticides
- b) Manufacture of fertilisers
- c) Oxidiser for rocket fuels
- d) Purification of drinking water
- e) Fuel in fuel cell
- f) Medical utility



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**46.** Classify the following reactions into combination, displacement, decomposition and double displacement reaction.





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**47.** Excess use of C.F.C causes depletion of ozone layer.

a) What is C.F.C?

b) How does excess use of C.F.C cause depletion of

ozone layer?

c) How is ozone layer depletion harmful to the living system an environment?



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**48.** Find the relation and fill in the blanks:

Combustion gas: Hydrogen

Combustion: .....



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**49.** Which element found more in stratosphere.

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50. ....gas is fomed by the combination of oxygen and nitrogen at the time of lightning.

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51. The main compound of hydrogen is .....

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52. Which substance is used for purifying drinking water in ponds and wells?



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**53.** Write two examples for double decomposition reaction.



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**54.** "Hydrogen as the fuel of the future" this is the heading of once science magazine.

a) Write 2 advantages of using hydrogen as fuel?

b) What are the limitations for using hydrogen as fuel.



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**55.** Zinc reacts with dilute hydrochloric acid to produce hydrogen gas.

a) Write down the balanced chemical equation of the reaction taking place there.

b) Which type of reaction is it?

(Combination reaction, displacement reaction, Decomposition reaction)

A. of the reaction

B.

C.

D.

**Answer:**



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**56.** Hydrogen is a fuel to no environmental pollution.

a) Which are the products formed when hydrogen burns in the air?

b) Write down the chemical equation of the combustion of hydrogen.



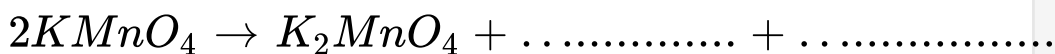
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57. Some potassium permanganate taken in a test tube and heat it. Insert a glowing splinter in to the test tube.

a) What do you observe?

b) Reason behind this?

c) Complete the equation:



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58. Take 5mL of dilute hydrochloric acid in a test tube and add zinc granules to it. Bring a lighted match stick to the test tube.



a) What do you observe? What is its reason.

b) Produced gas collected in a balloon and bound it.

The balloons rised up in air. What is the reason?



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**59.** A graphic showing the calorific value of fuels is given below:

a) Which among this fuels is hydrogen?

b) Atmospheric pollution does not occur when hydrogen is used as fuel. Why?

c) Usually hydrogen is not used as a fuel. Why?

'(##VPU\_TTT\_CHE\_IX\_C06-E04\_012\_Q01##)'



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**60.** Some chemicals available are given below.

*(NaCl, conc. HCl, KMnO<sub>4</sub>, K<sub>2</sub>SO<sub>4</sub>, CuSO<sub>4</sub>)*

a) Choose the chemicals given below that are used for the laboratory of chlorine.

b) Chlorine Formed is usually passed through concentrated sulphuric acid. Why?

c) Bleaching powder is used as a source of chlorine for different purposes. How bleaching powder is prepared?

d) Write down any two other uses of chlorine.



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**61.** Oxygen is essential for life on earth.

a) How is oxygen prepared in laboratory?

b) Write down any two uses of chlorine.

c) Ozone is an allotrope of oxygen. What is the role of ozone layer?

d) What are the main substances causing the depletion of ozone layer?



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