



# CHEMISTRY

## BOOKS - S CHAND CHEMISTRY (HINGLISH)

### TEST PAPER 4

#### Section A

1. Name the substance which on treatment with chlorine yields bleaching powder.



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2. Select the biodegradable items from the list given below. Polythene bags, old clothes, wilted flowers, pencil shavings, glass bangles, bronze statue, vegetable peels

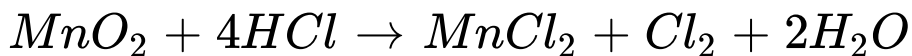


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3. Define (i) Oxidation, and (ii) reduction.

Identify the substances oxidised and reduced

in the chemical reaction:



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**4.** An element X has mass number 35 and the number of neutrons in its atom is 18.

(a) To which group of the periodic table element X belongs?

(b) To which period of the periodic table element X belongs?

(c) What will be the formula of molecule of element X?



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5. (a) What happens when potassium iodide solution is added to lead nitrate solution?

Give equation of the reaction involved. What type of reaction is represented by this example?

(b) Give one example of another reaction

which is of the same type as the above reaction.



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6. (a) Write two equations to show the extraction of copper from its sulphide ore.

(b) How will you refine copper? Draw a labelled diagram of the electrolytic cell used for the refining of copper.



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7. (a) What are ionic compounds and covalent compounds? Give the name and formula of one ionic compound and one covalent compound.

(b) Write the major points of difference between ionic compounds and covalent compounds.



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8. (a) Name the metal which is extracted from haematite ore.

(b) name one ore of aluminium. Name the aluminium compound present in this ore and write its chemical formula.

(c) How is aluminium metal extracted? Explain with the help of an equation.

(d) name the electrode at which aluminium metal is produced.

(e) Which gas is produced during the extraction of aluminium? at which electrode is this gas produced?



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9. (a) What is a soap ? Name one soap.

(b) Describe the structure of a soap molecule with the help of a diagram.

(c ) Explain the cleansing action action of soap . Draw diagrams to illustrate your answer.



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10. A small piece of sodium metal is added to a organic liquid  $C_2H_6O$ , taken in a dry test-tube. Bubbles are produced in the test-tube. When a burning match-stick is brought near the



mouth of the test-tube, the gas burns with a 'pop' sound, making a little explosion

(a) Name the functional group present in the organic liquid.

(b) Write the name and formula of an organic liquid having this functional group.



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**11.** A student was given a white powder and asked to study the action of water on it. When the student added some water to the white

powder, it set into a hard mass in about half an hour.

(a) What is the common name and chemical formula of white powder?

(b) Name its two uses.



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**12.** A scientist performed experiment to analyse the two samples of air given to him: Air Sample A and Air Sample B'. The results of analysis for these two air samples are given

below

*Air Sample A*

Oxygen : 21%  
Carbon dioxide : 0.04%  
Water vapour : A little

*Air Sample B*

Oxygen : 16.4%  
Carbon dioxide : 4.4%  
Water vapour : A lot

(a) Which air sample, A or B, represents 'exhaled air'? Why?

(b). Which air sample, A or B, represents 'inhaled air'? Why?



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**13.** Name a metal which is kept immersed in kerosene oil. Why is it kept this way ?



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14. Equal amounts of sodium hydrogencarbonate are taken in two test tubes A and B. Acetic acid is added to test-tube A whereas an equal volume of hydrochloric acid is added to test-tube B. In which test-tube, effervescence will occur more vigorously and why?



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15. (a) The recovery of silver nitrate solution involves displacement by copper metal. Write the equation of the reaction that takes place. Give the states of all the substances.

(b) Under what soil conditions do you think a farmer would treat the soil in his fields with quicklime ? Why?

(c) Name one sodium compound which is used for softening hard water and another which is used in fire extinguishers.



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**16.** (a) Fresh milk has a pH of 6. When it changes into curd (yogurt), will its pH value increase or decrease ? Why ?

(b) Name the gas evolved when dilute HCl reacts with sodium hydrogencarbonate. How is it recognised ?

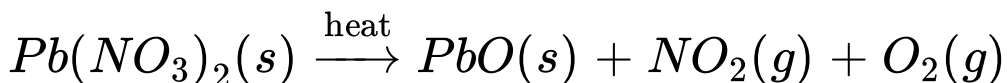
(c) On adding dilute hydrochloric acid to copper oxide powder, the solution formed is blue-green. Predict the new compound formed which imparts a blue-green colour to the solution.



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17. (a) Balance the following chemical equation

:



(b) State two characteristic features of carbon which when put together give rise to a large number of carbon compounds.

(c) Describe an activity to show that acids produce ions only in aqueous solutions.



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18. (a) What are the common names of . (a)  $CaOCl_2$ , and (b)  $Na_2CO_3 \cdot 10H_2O$  ?

(b) Why should plaster of Paris be stored in a moisture-proof container?

(c) Explain why, while diluting a concentrated acid, acid should be added to water and not water to the acid.



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19. What are the different ways in which glucose is oxidised to provide energy in



various organisms ? Give one example of each.



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**20.** What are the three R's to save the environment? Explain with one example of each. Which fossil fuel is conserved when we save on electricity ?



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21. (a) What is reactivity series of metals ?

What can you say about the reactivity of metals which are placed:

(i) in the middle of reactivity series?

(ii) towards the bottom of reactivity series?

(iii) towards the top of reactivity series?

(b) A metal is placed in the middle of reactivity series. Suggest a chemical process to obtain this metal from its oxide. Support your answer with one example.

(c) A metal is placed towards the top of the reactivity series. Suggest a chemical process to

obtain this metal from oxide. Support your answer with one example.



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**22.** (a) Describe the importance of pH in everyday life. Illustrate your answer with examples.

(b) A farmer has found that the pH of soil in his fields is 4.2. Name any two chemical materials which he can mix with the soil to adjust its pH. Give reason for your choice.

(c) Why are detergents also called 'soap-less soaps' ? Give the various advantages of detergents over soaps.

(d) A person put some universal indicator paper on to wet soap. The pH is found to be 8. What does this tell you about soap ?



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**23.** The far point of a myopic person is 80 cm in front of the eye. What is the nature and

power of the lens required to correct the problem?



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**24.** A resistor of 4 ohm resistance and an electric lamp of 20 ohm resistance are connected in series across a 6 volt battery.

Draw a labelled circuit diagram by using the symbols for ohm and volt. Calculate:

(a) total resistance of the circuit.

(b) current flowing through the circuit.

(c) potential difference across the resistor.

(d) potential difference across the electric lamp.



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## Section B

1. A person connects too many electrical appliances to a single socket in his house. When all these electrical appliances connected to the single socket are switched on at the

same time, the electric fuse of circuit blows off.

(a) What is the process of connecting to many electrical appliances to a single socket known as ?

(b) Which effect of electric current is responsible for the blowing off of fuse wire?



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2. When a blue coloured copper salt is heated strongly, it forms a white copper salt. The

white copper salt can be reconverted into blue salt by adding a liquid X.

(a) Write the formula of blue copper salt.

(b) Write the formula of white copper salt.

(c) What substance is lost when blue copper salt is converted into white copper salt?

(d) Name the liquid X.



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**3.** A student took a sodium salt and dissolved it in water. When this aqueous sodium salt



solution was tested with universal indicator paper, its pH was found to be 9.

(a) What does pH 9 tell us about the sodium salt solution.

(b) Name one sodium salt which can produce such a solution.



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4. In the  $F_2$  generation of a cross, progeny having different traits are produced in the ratio 3 : 1 . State whether it is a monohybrid

cross or a dihybrid cross ? Give one example of such a cross.



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