

CBSE SAMPLE PAPER -2011

SCIENCE

1. What happens when a small piece of sodium is dropped into ethanol? 1x5=5
2. An element M is in the third group of the periodic table. Write the formula of its oxide.
3. A person is advised to wear spectacles with convex lenses. What type of defect of vision is he suffering from?
4. A convex lens has a focal length of 40 cm. Calculate its power.
5. Name the product other than water formed on burning of ethanol in air. 2x5=10
6. Why do all the tendency to gain electrons change as we go from left to right across a period? Why?
7. What is meant by periodicity in properties of elements with reference to the periodic table?
8. How do atomic sizes of elements vary in a period? Is there some exception? Explain giving an example.
9. What is scattering of light? What is the cause of blue colour of ocean?
10. Between which two points of a concave mirror should an object be placed to obtain a magnification of -3? 3x5=15
11. (a) What is vinegar?
(b) Describe with a chemical equation, what happens when sodium hydrogen carbonate reacts with ethanoic acid.
12. A 5.0 cm tall object is placed perpendicular to the principal axis of a convex lens of focal length 20cm. The distance of the object from the lens is 30 cm. By calculation determine (i) the position and (ii) the of the image formed.
13. Two compounds A and B have the molecular formula C₃H₆ and C₃H₈ respectively. Which of these is most highly to give an addition reaction Explain?
14. Complete the following equations and write the names of products so formed:
(a) $\text{CH}_3\text{COONa} + \text{NaOH} \xrightarrow{\text{heat}}$ _____
(b) $\text{C}_2\text{H}_5\text{OH} + \text{O}_2 \xrightarrow{\text{AlkMnO}_4}$ _____
(c) $\text{CH}_3\text{COOH} + \text{C}_2\text{H}_5\text{OH} \xrightarrow{\text{Con. H}_2\text{SO}_4}$ _____
15. Give three points of difference between Mendeleev's periodic table and the Modern periodic Table. 5x4=20
16. An organic compound 'A' is widely used as a preservative in pickles and has a molecular formula C₂H₄O₂. This compound reacts with ethanol to form a sweet smelling compound 'B'. (a) Identify the compound 'A' (b) write the chemical equation for its reaction with ethanol to form compound 'B'. (c) How can we get compound 'A' back from 'B'? (d) Name the process and write corresponding chemical equation. (e) Which gas is produced when compound 'A' reacts with washing soda? Write the chemical equation.
17. Name the functional group of organic compounds that can be hydrogenated. With the help of a suitable example explain the process of hydrogenation mentioning the conditions of the reaction and any one change in physical property with the formation of the product. Name any one natural source of organic compounds that are hydrogenated.
18. At what distance should an object be placed from a lens of focal length 25 cm to obtain its image on a screen placed on the other side at a distance of 50 cm from the lens? What will be the magnification produced in this case?
19. When blue litmus solution is added to a solution of acetic acid, it turns red. What change will be observed when a few drops of concentrated NaOH is added to it? (a) The mixture turns blue (b) The mixture remains red (c) The mixture becomes colourless (d) None of the above
20. (a) What is a homologous series of substances? (b) In an organic compound, which parts largely determine its physical and chemical properties? (c) Write a chemical equation to represent the reaction of ethanol with acidified solution of potassium dichromate.