# CBSE Sample Paper
# Class: X
# Science and Technology

**General Instructions:**

1. The question paper consists of two **sections A and B.** You are to attempt both the sections and all questions are compulsory.
2. The candidates are advised to attempt all the questions of **section A** separately and **section B** separately.
3. Marks allocated to every question are indicated against it.
4. Question no**. 1- 4 in section A** and **17** and **18 in section B** are to be answered in one word or one sentence.
5. Question no: **5-8 in section A** and **19** and **20 in section B** are to be answered in 30-40 words each.
6. Question no**: 9-14 in section A** and **21- 23 in section B** are to be answered in 40 to 50 words each.
7. Question no: **15 and 16 in section A** and **24 in section B** are to be answered in 70 words each.

## SECTION-A

Q.1. What is the refractive index of iron & glass (1)

Q.2. Give one example of a Weak organic acid and one example of a strong mineral base. (1)

Q.3. What is the composition of Magnalium ? (1)

Q.4. What is meant by lateral inversion ? (1)

Q.5 What are the uses of soft iron core used in solenoids & how is the effect of magnetic field can be adjusted ? (2)

Q.6. (i) What is the effect of catalyst & inert gases on a reversible chemical reaction?

(ii) Show graphically , the rate of the reaction between granulated zinc and dilute HCl at 293K and 303K. (2)

Q.7. (ii) In a circuit , if the two resistors of 8Ω and 15Ω are connected in series , how does the current passing through the resistors , compare.

b) Two identical resistors each of resistance 6 Ω are connected

1) In series 2) in parallel (2)

In line to a battery of 12 volts. Calculate the power consumed in both the cases.

Q.8. Write the chemical reactions of ethanoic acid with (a) Sodium metal (b)Sodium carbonate (2)

Q.9. What are Geostationary satellites ? How they are useful to mankind ? Derive the height at which the satellite can be serving as Geostationary satellite ? (3)

Q.10. How is plaster of paris is prepared ? What is its special property ? What is lime water ? (3)

Q.11. Draw a ray diagram to show how an image is formed by a compound microscope. On what factors its resolving & magnifying power depends ? (3)

Q.12. An organic compound 'X' is an essential constituent of wine & beer. 'X' is responsible for the intoxication caused by these drinks. Oxidation of 'X' yields an organic acid 'Y', which is present in VINEGAR. Name these compounds 'X' & 'Y' with their structural formula ? (3)

Q.13. Out of two fuels $C_3H_8$ & $C_4H_9OH$, which one will have a higher calorific value & why ? (3)

Q.14. An ore gives sulphur dioxide $SO_2$ gas on heating with air ? State the method that you would apply for its concentration. Name any two metal ores which can be concentrated by this method ? (3)

Q.15. a) Name the active isotopes of Strontium ?

b) What is the uses of (i) moderator & (ii) Contol rod ? Give two examples of each ?

or

a) What is nuclear fusion ?

b) Complete the two nuclear reactions

$$_{13}Al^{27} + {}_{1}H^{1} \longrightarrow \_\_\_\_\_ + {}_{0}n^{1}$$

$$_{12}Mg^{24} + \_\_\_\_\_ \longrightarrow {}_{11}Na^{23} + {}_{1}H^{1} \qquad (5)$$



Q.16. a) Name the Chief ore of aluminium.

b) Write the formula of Bauxite & magnalite ?

c) With the help of labelled diagram describe the method of extraction of aluminium from it's ores ?

d) Why is cryolite added to alumina prior to the extraction of aluminium ?

e) Write a chemical reaction to show the reducing nature shown by aluminum ?

**OR**

(i) Give the principle for the processes of leaching and hydraulic washing.

(ii) Why is it necessary to convert metal sulphides and carbonates to oxides?

(iii) Write the thermite process with reactions?

(iv) Describe froth floatation process. (5)

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