

SAMPLE PAPER – 2007
SCIENCE & TECHNOLOGY
CLASS - X

TIME : 2 ½ HOURS

Max Marks: 60

GENERAL INSTRUCTIONS:

1. The question paper comprises of two sections A and B. You are to attempt both the Sections.
2. The candidates are advised to attempt all the questions of Section A Separately and section B separately.
3. All questions are compulsory.
4. There is no overall choice. However, internal choice has been provided in two questions of five marks category in Section A and one question of 2 marks category and one question of 3 marks category in section B. You are to attempt only one option in such questions.
5. Marks allocated to each question are indicated against it.
6. Questions **1 to 4** in Section A and **17, 18** in Section B are very short answer questions.
These are to be answered in **one word** or **one sentence only**.
7. Questions **5 to 8** in Section A and **19, 20** in Section B are short answer questions. These are to be answered in about **30-40** words each.
8. Questions **9 to 14** in Section A and **21 to 23** in Section B are also short answer questions. These are to be answered in about **40 – 50** words each.
9. Questions **15, 16** in Section A and **24** in Section B are long answer questions. These are to be answered in about **70** words each.

SECTION – A

1. Give the composition, properties and uses of stainless steel. 1
2. Define pH ? 1
3. Give two advantages of connecting electrical appliances in parallel in a domestic circuit? 1
4. State two disadvantages of using nuclear fission energy over fossil fuels. 1
5. How many joules are in one watt - hour? Name the three isotopes of hydrogen. Write their symbols also. 2
6. State rule of magnetization in solenoids 2
7. How can we connect four resistances; of values $4\ \Omega$, $4\ \Omega$, $4\ \Omega$ and $12\ \Omega$ to get an effective resistance of $6\ \Omega$? 2
8. What happens when (i) Iron nail is placed in silver nitrate solution (ii) Iron strip is dipped in zinc sulphate solution? 2
9. What is the H^+ ion concentration in an aqueous solution having $[OH^-] = 1 \times 10^{-11}$ mol L^{-1} ? Give two examples of Irreversible reactions and two examples of reversible reactions. 3
10. What is meant by ore concentration (or ore enrichment)? Describe froth floatation method. 3
11. What are magnetic field lines ? List four characters of these lines 3

12. An organic compound 'A' has molecular formula ($C_2H_4O_2$). It reacts with sodium carbonate to produce a gas and salt, the gas turns lime water milky. What is the functional group in the compound 'A' ? Write its structural formula What is IUPAC name of 'A' ? Give chemical equations for reaction involved with sodium carbonate and the gas evolved with lime water. 3
13. What are constellations ? Name any two constellations visible in (i) Spring and (ii) Autumn. Draw the shape of any one in each season. 3
14. Explain with a suitable diagram, how a convex mirror diverges a parallel beam of light rays. Mark the focus. An object 5 cm height is placed at a distance of 10 cm from a convex mirror of radius of curvature 30 cm. Find the nature, position and size of the image. 3
15. Define fermentation. How is ethanol manufactured by (i) fermentation, (ii) ethene ? Give two physical and two chemical properties of ethanol ? 5
16. A white powdered solid, when added to water, produces a hissing sound. Identify the compound. How does this compound react with moist hydrogen chloride gas? Write the chemical equation. Give two uses of the same compound. What is the common structural feature in aldehyde and ketones? How do they differ from each other? 5

SECTION - B

17. What is the effect of sympathetic and parasympathetic nerves on lungs ? 1
18. Name the enzymes used for the following biological reactions
 a) Glucose \rightarrow Ethyl alcohol b) Starch \rightarrow Glucose 1
19. What is a reflex action? Explain with the help of an example. 2
20. What is the effect of placing an iron core in a solenoid? What are the two ways in which the resistances are combined ? 2
21. How do plants obtain food ? What are the two phases of photosynthesis ?
22. Describe with labelled diagram the alimentary canal of man
23. 'Ontogeny repeats phylogeny' ? Explain the meaning of this statement
24. Mention three methods to control water pollution

OR

What is soil erosion ? What are its causes and effects ? How can it be checked