

Elite



(a centre of education)

Pre Board 06-07

Class: **X**
Subject: **Science**

Time: **2½ hr.**
Marks: **60**

GENERAL INSTRUCTIONS

1. The question paper consists of two sections: A and B.
2. Internal choices have been provided in some questions. Attempt any one of them.
3. Marks of the questions are indicated against them.
4. Questions 1 to 4 in section A and 17, 18 in section B are very short answers questions to be answered in **one word or one sentence** only.
5. Questions 5 to 8 in section A and 19, 20 in section B are short answer questions to be answered in about 30-40 words each.
6. Questions 9 to 14 in section A and 21 to 23 in section B are also short answer questions to be answered in about 40-50 words each.
7. Questions 15, 16 in section A and 24 in section B are long answer questions. to be answered in 70 words each.

SECTION – A

1. Give one use of glass fibres. (optical fibres). (1)
2. Define 1 dioptre. (1)
3. A ray of light incident obliquely on the surface of a rectangular glass slab emerges out of the opposite face undergoing some lateral displacement. How will the lateral displacement produced by the slab change on increasing the thickness of the slab. (1)
4. What is minimum wind velocity required for a functional wind mill for production of electricity? (1)
5. In a particular reaction the concentration of iodine $10^{-5} \text{ mol L}^{-1}$ to $10^{-3} \text{ mol L}^{-1}$ in 200 seconds. What is the average rate of reaction? (2)
Consider the chemical reaction between given amount of zinc and 1M HCl. Let this reaction be carried out, in turn, at 300 K and 310 K. Draw graphs, showing variation in volume of hydrogen gas evolved with time in two cases.
6. Briefly explain the manufacture of cement. (2)
7. Draw the diagrams showing magnetic lines of force, when the direct current is passed through
(i) a circular loop of wire, (ii) a solenoid (2)
OR
Explain the terms short circuit and overloading.
How does fuse wire help in avoiding these two hazards of electricity?
8. State the two Faraday's laws with their mathematical expressions. (2)
9. Write the reaction taking place, when: (3)
 - (i) Ethanal is reduced in presence of palladium.
 - (ii) Sulphur is reacted with conc. HNO_3

(iii) Sodium salt of ethanoic acid is reacted with soda lime.

10. 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 enable him to see very distant objects distinctly? Draw a ray diagram also showing correction of this defect.

OR (3)

A convex mirror used on a moving automobile has a radius of curvature of 4.0 m. If a truck is following it at a constant distance of 6.0 m, find the position, nature and magnification for the image formed.

Give two reasons for using convex mirror in the automobile.

11. Draw a flow chart to describe manufacture of ammonia by Haber's process.

Comment on basic nature of ammonia. (3)

12. The following circuit diagram shows three resistors 2Ω , 4Ω and $R\Omega$ connected to a battery of potential difference 2 V. A total current of 0.25 A flows through the circuit. (3)

(i) What is potential difference across 4Ω resistor?

(ii) Calculate the value of R? (d-129)

(iii) How much current flows through $R\Omega$ resistor?

13. What are two characteristic properties of the fuels used for launching rockets? Why are liquid fuels considered risky for launching rockets? Why do we require multistage rockets for satellites carrying payloads? (3)

14. Draw a neat and well labeled diagram of the blast furnace used for extraction of iron. Write balanced equations of the chemical reactions taking place in the blast furnace. (3)

15. State the essential conditions for two types of nuclear reactions to take place.

How can these reactions be used for peaceful as well as harmful purposes?

Draw a neat and labeled diagram of the nuclear reactor. (5)

16. An organic compound A of molecular formula C_2H_6O on oxidation gives an acid B, which have same number of carbon atoms as compound A. Compound A is used in sterilization. Name the compound A and B. Write the chemical equation involved in formation from A.

How can A be prepared by the process of fermentation? Explain giving suitable reactions.

OR (5)

An organic compound having formula C_3H_6O is manufactured by oxidation of an aromatic hydrocarbon cumene. Explain the manufacture.

How does this compound reacts with hydrogen cyanide?

Write the oxidation as well as reduction reactions of this compound?

SECTION – B

17. Name the respiratory organs in (a) Insects, (b) Frog (1)

18. Name two occupational hazards. (1)

19. Give reasons:

(i) Why person with blood group O is a considered as universal donor and AB universal recipient?

(ii) Why Rh^- mother may lose her baby, if baby is Rh^+ ? (2)

20. How does development affect the environment? How can a balance be struck between the environment and development. Explain Briefly. (2)
21. Draw a neat sketch showing double fertilization process. (3)
22. Explain the terms (i) reflex action, (ii) reflex arc
Give two suitable examples of reflex action. (3)
23. With the help of a diagram, show the sex determination in human beings. Why females have no role in sex determination. (3)
24. What is photosynthesis? Write overall equation of the reaction representing photosynthesis.
Where does the light and dark reaction take place in the chloroplast? Explain the light reaction in the mechanism of photosynthesis. (5)

The greatest pleasure in life is doing what people say you cannot do.

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