

PRE-BOARDS (2007-2008)

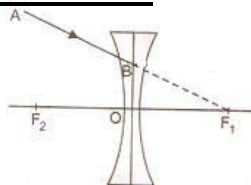
Class: X
Subject: Science

Max. Marks: 60
Time: 2½ hrs.

GENERAL INSTRUCTIONS:

- This question paper consists of two sections A and B. You are to attempt both the sections. All questions are compulsory.
- There is no overall choice. However internal choice has been provided in some questions. Attempt any one of them.
- Attempt questions of two sections separately.
- Q.1-6 in section A and 17-19 in section B are very short answer type questions and carry one mark each.
- Q.7-10 in section A and 20-24 in section B are short answer type questions and carry two marks each.
- Q.11-14 in section A and 25-26 in section B are also short answer type questions and carry three marks each.
- Q.15 and 16 in section A and Q.27 in section B are long answer type questions and carry five marks each.

Section-A



1. Complete the following ray diagram

- Name one metal and one non-metal which exist in liquid state at room temperature.
- Why should be curd and other sour food-stuffs not be kept in copper and brass vessels?
- In an experiment, a student obtained a sharp and inverted image of a needle at a distance of 20 cm from the pole of a concave mirror. Where is the needle placed, if focal length of the mirror is 10 cm?
- Give an example of endothermic reaction.
- Arrange the following metals A, B and C in decreasing order of chemical reactivity (on the basis of following reactions)
$$A_2O_3 + 3B \longrightarrow 3BO + 2A; \quad CSO_4 + A \longrightarrow ASO_4 + C$$
- What happens when silver chloride is exposed to sunlight? Write a chemical equation for the reaction. Also give one use of such reaction.
- Potato chips sold in packaging are flushed with nitrogen before packing. Why? Give one more example of avoiding such conditions. Also state the optimal temperature for such food stuff to get spoiled.
- Calculate the monthly bill of a person who uses a refrigerator of 400 w everyday for 15 hours, three tube lights of 40 w each for 10 hours daily, two fans of 60 w each for 12 hours daily, if the rate of electricity is Rs.11 per unit
- How is strength of the magnetic field at a point near a wire related to the strength of the electric current flowing in the wire? Draw a labelled diagram showing the magnetic field pattern of a circular coil carrying current.

OR

What is meant by the term 'frequency' of alternating current? What is its value in India?

11. The far point of a myopic person is 80 cm in front of eye. What is the nature and power of the lens required to enable him to see distant objects distinctly?
12. Modern periodic law emphasizes on arranging elements on the basis of atomic numbers rather than atomic masses. How is it advantageous? How does the atomic size vary as we move on in a period from left to right?
13. An object of size 4 cm is placed at a distance of 24 cm from the optical centre of a convex lens of focal length 8 cm. Find the nature, size and position of image.
14. What are alloys? Write the composition of the alloy Duralium and write its two uses.
15. Explain the following (any five)
 - (i) Why is tungsten used almost exclusively for making filament in incandescent lamps?
 - (ii) Why is series arrangement not preferred in domestic circuits?
 - (iii) Why are conductors of electric heating devices such as oven and iron are made up of alloy rather than pure metal?
 - (iv) The sky appears to be blue during daytime to a person on Earth.
 - (v) Ammeter is always connected in series in the circuit.
 - (vi) Sun is visible to us approximately 2 minutes before sunrise.
16. An organic compound X is used as antiseptic in hospitals and for sterilization and has the molecular formula C_2H_6O . This compound is sometimes denatured with copper sulphate to avoid its misuse. This compound reacts with oxygen in presence of acidified potassium permanganate to form another compound B, which is acidic in nature. This compound B reacts with sodium hydrogen carbonate to release effervescence of a gas and water vapour and form a compound C. Identify the compounds A, B and C and write the above stated reaction.

OR

- (i) What are micelles? Explain cleansing action of soaps.
- (ii) Why soap is wasted when it is used with hard water for cleaning clothes?
- (iii) What is major disadvantage of using synthetic detergents over soaps?
- (iv) Write two advantages of using soaps than synthetic detergents.

Section-B

17. State one difference between aerobic and anaerobic respiration.
18. Name the 'flight or fight' hormone.
19. Name two gases other than carbon-dioxide, that are given out during burning of fossil fuel and contribute towards acid rain formation.
20. Give any two ways in which non-biodegradable wastes would affect the environment.
21. Describe the different modes of nutrition in plants giving example.
22. How do we say that we are closely related to chimpanzee than a bacterium?
23. How is small intestine designed to digest food?
24. Define blood pressure. What is the value of blood pressure under normal conditions?
25. How do Mendel's experiments show that characteristics inherited independently?
26. Write composition of bio-gas. Explain the principle of its production.
27. (i) Describe the structure and function of nephrons in humans.
(ii) What are the methods used by plants to get rid of excretory products?

OR

Explain how does water and minerals transported in plants. Explain it using two forces. Also, explain the transport of synthesized food in all parts of plants.