



DELHI PUBLIC SCHOOL

SAIL TOWNSHIP, RANCHI

PRE- BOARD-II EXAMINATION (2017-18)

Class:-X
Time- 3 Hrs.

Subject:- Science (Theory)
M.M-80

General Instructions:-

- i. The question paper has 27 questions in all. All questions are **compulsory**.
- ii. Marks are indicated against each question.
- iii. Questions from serial number 1 to 2 of **Section- A** are very short answer type questions. Each question carries **one mark**.
- iv. Questions from serial number 3 to 5 of **Section- A** are **2 marks** questions. Answer of these questions should not exceed **30 words** each.
- v. Questions from serial number 6 to 15 of **Section- A** are **3 marks** questions. Answer of these questions should not exceed **50 words** each.
- vi. Question number 16-21 of **Section- A** is **5 marks** questions. Answer of these questions should not exceed **70 words** each.
- vii. Question numbers 22 to 27 in **section –B** are based on practical skills. Each question is of **2 marks**.

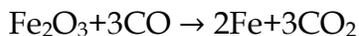
Section - A

1. Where does digestion of fat take place in our body? [1]
2. Give an example of a flower which contains both stamens and carpels. [1]
3. Which two criteria did Mendeleev use to classify the elements in the periodic table? [2]
4. A convex lens produces a real and inverted image 2.5 times magnified at a distance of 25 cm from the lens. Calculate focal length of the lens. [2]
5. Mention the purpose of blackening the interior of solar cooker. [2]
6. Name the electric device that converts electrical energy into mechanical energy. Draw the labelled diagram and explain the principle involved in this device. [3]

OR

- (i) What is the function of earth wire in electrical instruments?
- (ii) Explain what is short circuiting an electric supply.
- (iii) What is the usual current rating of the fuse wire in the line to feed?
(a) Light and Fans (b) Appliances of 2 kw or more power
7. An electric bulb is marked 100w, 230v. If the supply voltage drops to 115 v. What is the heat and light energy produced by the bulb in 20 minutes? Calculate the current flowing through it. [3]
8. (a) Which gas is evolved when hydrochloric acid is added over a piece of marble? Write the balanced chemical equation.

(b) Name the reducing agent and the oxidizing agent in the following reaction:



(c) Name two solutions which when mixed forms a yellow precipitate. [1+1+1=3]

9. (a) What is the valency of magnesium with atomic number 12 and sulphur with atomic number 16? Explain with the help of electronic configuration.

(b) How does the valency vary in a period in moving from left to right? [2+1=3]

10. Explain the ways in which glucose is broken down in presence, lack and absence of oxygen. [3]

OR

List three differences between arteries and veins.

11. How do Mendel's experiment show that traits may be dominant or receive. [3]

12. A doctor has prescribed a corrective lens of power - 1.2 D to a person suffering from defect of vision.

(a) Identify the object

(b) Find the focal length of the lens

(c) Is the prescribed lens diverging or converging? Show the nature of this lens with the help of a ray diagram. [3]

13. (a) Write the steps involved in the manufacture of washing soda from baking soda with the help of chemical reactions.

(b) How can washing soda remove hardness of water? Give suitable chemical reaction. [2+1=3]

OR

Salts are formed by the neutralization of an acid by a base. But the salts are not always neutral. Explain with the help of suitable examples.

14. List three factors that provide evidences in favour of evolution in organism and state the role of each in brief. [3]

15. Mr. Sharma was suffering from various types of diseases. After a thorough checkup he was diagnosed to be HIV⁺. Soon this news spread in his neighbourhood and he was left isolated. Answer the following questions based on the information given above.

(a) Do you think people's indifference towards HIV⁺ person is justifiable? What kind of approach should we have towards the person suffering from AIDS?

(b) Name two sexually transmitted diseases.

(c) List two ways to check the spread of AIDS. [3]

16. With the help of a labelled circuit diagram describe an activity to illustrate the pattern of the magnetic field lines around a straight current carrying long conducting wire

(a) State the rule that is used to find the direction of magnetic field associated with a current carrying conductor.

(b) Name the unit used to measure magnetic field. [5]

17. (a) Write balanced chemical equations for each of the following:

(i) Ethanoic acid is treated with sodium bicarbonate.

(ii) Ethanol is heated with alkaline KMnO_4 solution.

(iii) Ethyl ethanoate is treated with NaOH solution.

(b) What is meant by a functional group? Identify the functional group in the following compounds:

$\text{C}_2\text{H}_5\text{COOH}$ and CH_3CHO [3+2=5]

OR

Give reasons for each of the following:

(a) Covalent compounds have low melting point and boiling point.

(b) Saturated compounds on burning give a clear blue flame whereas unsaturated compounds give a sooty flame.

(c) Ethanol gets converted to ethane in the presence of concentrated sulphuric acid.

(d) Poisonous substances like methanol or pyridine are added to ethyl alcohol.

(e) Carbon exhibits catenation much more than silicon.

18. What is meant by reflex-action? With the help of a labelled diagram trace the sequence of events which occur when we touch a hot object. [5]

19. (a) Demonstrate an activity with a well labelled diagram to prove that white light is made up of seven colours.

(b) Which colour of light bends least and which one the most while passing out from the prism. Also state the reason for the same. [5]

20. (a) Two ores A and B were taken. On heating ore A it gives carbon dioxide whereas ore B on heating gives sulphur dioxide. What steps will you take to convert them into metals?

(b) Give reasons for each of the following:

(i) Reactivity of aluminium decreases if it is dipped in nitric acid.

(ii) Carbon cannot reduce oxides of sodium or magnesium.

(iii) Iron articles are galvanized. [5]

21. (a) Explain the phenomenon of biological magnification? How does it affects organisms belonging to different trophic levels particularly the tertiary consumer.

(b) The number of trophic levels in a food chain is limited? Give reason to justify this statement. [5]

OR

(a) How is ozone formed in the upper atmosphere? Why is the damage of ozone layer a cause of cancer to us? State a cause of this damage.

(b) Why we say energy flow in the biosphere is unidirectional.

(c) Construct an aquatic food chain showing four trophic level.

Section- B

22. Does the universal indicator show acetic acid and dilute hydrochloric acid as equally strong acids? Explain. [2]

23. Take 10 ml of water in each of the two test tubes. Add a drop of oil to both the test tubes and label them as A and B. To the test tube B add a few drops of soap solution. Now shake both the test tubes vigorously for the same period of time and leave them undisturbed for some time. Does the oil layer separate out? Explain the observation. [2]

24. (a) Before starting the experiments to study factors of photosynthesis , teacher advised students to keep the plants in dark for few days. What could be the possible reason for that?

(b) Name the chemical used to stain and mount a temporary leaf peel. [2]

25. A student conducted an experiment to show CO_2 is released during respiration. List two precautions that he/she must take for obtaining correct observations. [2]

26. The values of current I flowing in a given resistor for the corresponding values of potential difference v across the resistor are given below

I (Amperes)	0.5	1.0	2.0	3.0	4.0
V (Volts)	1.6	3.2	6.4	9.6	12.8

Plot a graph between V and I and calculate the resistance of the resistor. [2]

OR

In a given ammeter , a student sees that needle indicates 17 divisions in ammeter while performing an experiment to verify Ohm's law . If ammeter has 10 divisions between 0 and 0.5 A, then what is the value corresponding to 17 divisions?

27. Refractive indices of media A, B, C and D are given below:

Media	Refractive Index
A	1.33
B	1.44
C	1.52
D	1.65

In which of these media is the speed of light (i) maximum and (ii) minimum? Find the refractive index of medium D.w.r.t medium A. [2]