INDIAN SCHOOL SOHAR

STD X	**PERIODIC TEST- 1I (2017-2018)**	**Time: 3Hours**
19 -9-17	**SCIENCE**	**Marks: 80**

General Instructions:

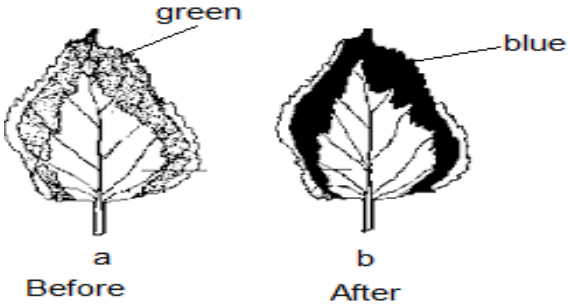
*(i) The question paper comprises of two Sections, **A** and **B**. You are to attempt both the sections.*
*(ii) The question paper consists of 27 questions. **All** questions are **compulsory.***
*(iii) All questions of Section, **A** and all questions of Section **B** are to be attempted separately.*
*(iv) Question numbers 1to2 in Section **A** are one- mark questions. These are to be answered in one word or one sentence.*
*(v) Question numbers 3to5 in Section **A** are two- marks questions. These are to be answered in 30 words each.*
*(vi) Question numbers 6 to 15 in Section **A** are three- marks questions. These are to be answered in about 50 words each.*
*(vii) Question numbers 16 to 21 in Section **A** are five- marks questions. These are to be answered in about 70 words each.*
*(viii) Question numbers 22 to 27 in Section **B** are two- marks questions based on practical skills. These are to be answered in brief.*
(ix) There is no overall choice. However, an internal choice is provided in two questions of 3 marks each and one question of 5 marks.
(x) Wherever necessary, the diagrams drawn should be neat and properly labelled.

SECTION A

1. Define potential difference between two points in a conductor. 1

2. A student has been collecting silver coins and copper coins. One day she observed a black coating on silver coins and green coating on copper coins. Give the chemical name of black and green coating. 1

3. The given figures show a variegated leaf before and after an experiment. 2



(a) Why do the green areas in figure 'a' turn blue black in figure 'b'?
(b) What conclusion can be drawn from the above experiment?

4. Write balanced equations for the following: 2
(a) Aluminium + Bromine $\longrightarrow$ Aluminium bromide.
(b) Reaction between Calcium and water.

5. The parallel combination of two 10Ω resistors is placed across the terminals of a 24V battery. 2
(a) What is the effective resistance of the parallel circuit?

(b) What is the current through the entire circuit?

(c) What is the current through each branch of the circuit?

6. (a) Write the electron dot structures for potassium and chlorine. 3

(b) Show the formation of KCl by the transfer of electrons.

(c) Name the ions present in this compound, KCl.

7. State which of the following chemical reactions will take place giving suitable reason for each. 3

(a) $Zn(s) + CuSO_4(aq) \longrightarrow ZnSO_4(aq) + Cu(s)$

(b) $Fe(s) + ZnSO_4(aq) \longrightarrow FeSO_4(aq) + Zn(s)$

(c) $Zn(s) + FeSO_4(aq) \longrightarrow ZnSO_4(aq) + Fe(s)$

8. State three reasons for the following facts: 3

(a) Sulphur is a non-metal (b) Magnesium is a metal.

One of the reasons must be supported with a chemical equation.

OR

(a) How is metal extracted from cinnabar? Explain briefly.

(b) What happens when zinc carbonate is heated in the absence of oxygen?

9. (a) How will the strength of magnetic field due to a circular coil carrying current change at its centre when the (i) strength of current flowing in the coil is increased. (ii) number of turns in the coil is increased. 3

(b) Draw the pattern of magnetic field lines around a circular coil carrying current. Mark the direction of electric current and magnetic field lines.

10. (a) Explain the function of fuse and earth wire. 3

(b) How is fuse connected in a household circuit?

(c) Write one precaution that should be taken to avoid over loading.

11. The fission of an atom of uranium produces 10 million times the energy produced by the combustion of an atom of carbon from coal. In a nuclear reactor designed for electric power generation, nuclear fuel such as uranium can be used. This can solve the energy problem of the whole world. 3

(a) As a science student, would you suggest the use of uranium as a preferred source of energy? Give suitable reasons for your answer.

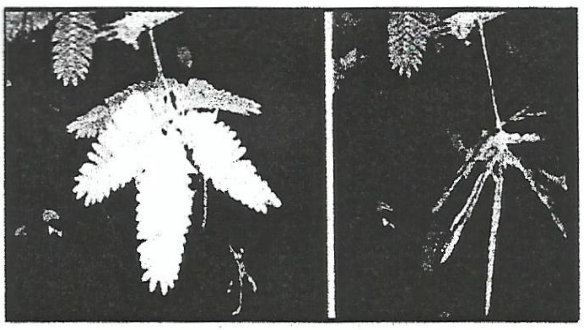
(b) Name the process that takes place in a nuclear power station.

(c) How is nuclear energy produced?

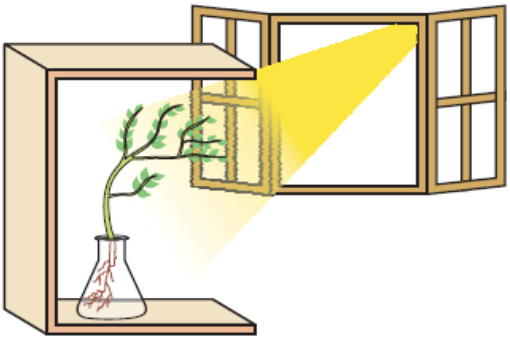
12. How is transport of water in plants different from the transport of food and other substances? 3

13. The food material taken in during the process of nutrition is used to provide energy. Enumerate the pathways involved in the breakdown of glucose. 3

14. The figures below shows two examples of plant movements. 3



A



B

(a) Name the stimulus that bring about movement in plant A and B.

(b) How does the movement of leaves of plant A differ from that of shoot tip in B?

15. Trace the sequence of events which occur when you accidently touch a hot object. 3

OR

Neurons are specialised for conducting information from one part of the body to the other. Trace the general scheme of how nervous impulses travel in the body.

16. (a) With the help of a circuit diagram, derive the expression for the heat produced due to a current flowing for a time interval 't' through a resistor 'R' having a potential difference V' across its ends. 5

(b) A circuit consisting of a battery of 4 cells of 2V each, connected to a key, an ammeter and two resistors of 2Ω and 3Ω respectively in series and a voltmeter to measure potential difference across 3Ω. Find the potential difference across 3Ω resistor.

OR

(a) Distinguish between the terms electrical resistance and resistivity of a conductor..

(b) A copper wire of resistivity 1.6×10^{-8} Ωm has a cross section area of 10×10^{-4} cm^2. Calculate the length of the wire required to make a 20Ω coil.

(c) An electric iron has a rating of 750W, 220V.Calculate the current flowing through it.

17. A student fixes a sheet of white paper on a drawing board. He places a bar magnet in the centre of it. He sprinkles some iron filings uniformly around the bar magnet. Then he taps the board gently. Now answer the following questions. 5

(a) What does the student observe? Draw a diagram to illustrate your answer.

(b) Why do the iron filing arrange in such a pattern?

(c) What does the crowding of the iron filing at the ends of the magnet indicate?

(d) Why do the two magnetic lines of force not intersect each other?

18. (a)"Sodium hydrogen carbonate is a basic salt" Justify the statement. How is it converted into washing soda? Explain. 5

(b)Write the name and chemical formula of the calcium compound used for disinfecting drinking water. How is this compound manufactured?

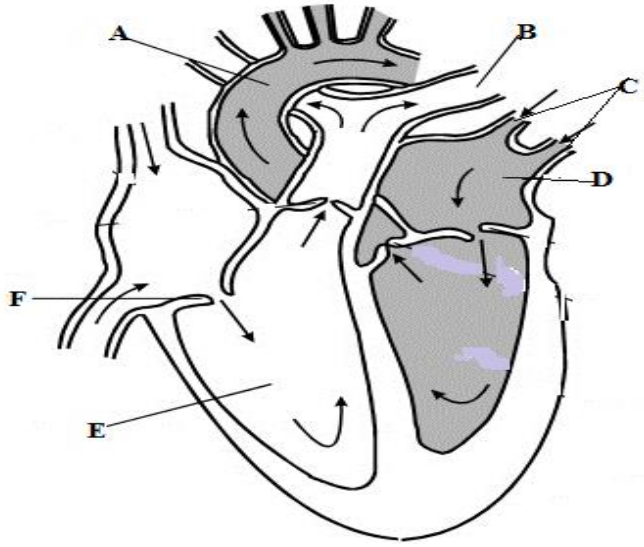
(c) Write the name and chemical formula of the products formed by heating gypsum at 373K.

19. a) Compound X and aluminium are used to join railway tracks. 5

(i) Identify the compound X. (ii) Name the reaction. (iii) Write down the reaction.

(b)What is an alloy? What are the constituents of solder alloy? Which property of solder makes it suitable for welding electrical wires?

20. (a) In the given figure showing the sectional view of the human heart label the parts marked A to F. 5



(c) Separation of right and left side of the heart is useful. Justify.

21. Mention the role played by the following organs/ glands in the human body. 5

(a) Thyroid gland (b) Adrenal gland (c) Cerebellum (d) Medulla (e) Nephrons.

PART B

22. Five solutions A, B ,C, D and E when tested with universal indicator showed pH as 4,1,11,7 and 9 respectively. 2

(a)Which solution is (i) strongly alkaline and (ii) weakly acidic?

(b) Arrange them in the increasing order of hydrogen ion concentration.

23. On passing excess CO_2 gas through lime water, it first turns milky and then becomes colourless. Explain why? Write all the chemical equations of the reactions involved. 2

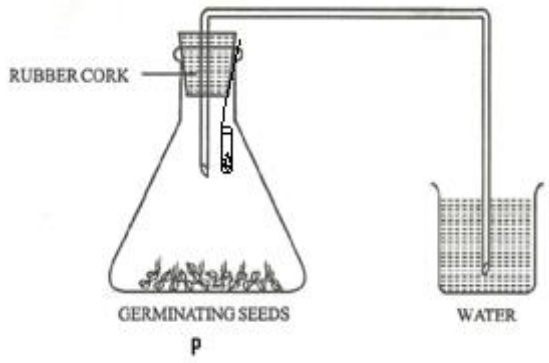
24. In an experiment on studying the dependence of current (I) flowing through a given resistor on the potential difference (V) applied across it. List two ways by which a student would change the value of current in the circuit. 2

25. In an experiment to study the relation between the potential difference across a resistor and the current through it, a student recorded the following observations. 2

Potential difference, V in volts	1.0	2.0	3.0	4.0	6.4
Current, I in amperes	0.1	0.2	0.4	0.4	0.64

On examining the above observations, the teacher asked the students to reject one set of reading. Which one of the above sets of reading can be rejected? Calculate the mean value of resistance of the resistor based on the remaining four sets of readings.

26. Given below is the experimental set up to study the evolution of CO_2 in respiration. 2



(a)Why does the water level in the delivery tube increase?

(b) Mention the role played by KOH placed in the test tube.

27. Neha was asked to prepare a temporary mount of a stained leaf peel. Write the correct procedure followed by her in preparing the slide. 2

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