CLASS X : SCIENCE PAPER SET-1

SECTION - A

1. Mention the part of the brain which maintains posture and equilibrium of the body.

2. Why are magnetic field lines more crowded towards the pole of a magnet ?

3. Blowing wind carries kinetic energy. Mention the two factors that causes wind to blow.

4. A compound of sodium 'X' is used in kitchen to make the pakoras crispy. it is also used to remove acidity in stomach. (i) Identify the compound 'X' and write its chemical formula. (ii) What chemical reaction occurs on heating it during the cooking of food?

5. Match the metals given in column - II with the methods used for their extraction given in column - I.

Column - I	Column - II
(1) Reduction with carbon	(a) Al
(2) Electrolytic reduction	(b) Zn
(3) Reduction with aluminium	(c) Na
	(d) Mn

6. Name the cells that control the opening and closing of the stomatal pore. How do they perform this function?

7. State what happens when dilute hydrochloric acid is added to : (i) Sodium carbonate (ii) Sodium hydrogen carbonate . Name the gas evolved along with chemical equations. Now will you test for the gas?

8. (a) In electrolysis of water, why is the volume of gas collected over one electrode double that of gas collected over the other electrode ?
(b) (i) What is observed when a solution of potassium iodide is added to a solution of lead nitrate taken in a test tube ? What type of reaction is this ? Write a balanced chemical equation to represent the above reaction.

9. Explain the following statements :
(a) Most metal oxides are insoluble in water but some of these dissolve in water. What are these oxides and their solutions in water called?
(b) At ordinary temperature the surface of metals such as magnesium, aluminium and zinc etc. is covered with a thin layer. What is the composition of this layer ? State its importance.
(c) Some alkali metals can be cut with a knife.

10.(a) What will be the action of litmus on : (i) Dry ammonia gas (ii) Solution of ammonia gas in water
(b) State the observations made on adding ammonium hydroxide to aqueous solution of : (i) Ferrous sulphate (ii) aluminium chloride

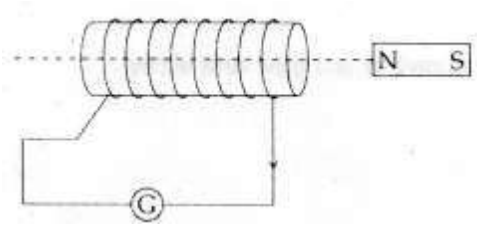
11. Explain how does auxin promote the growth of a tendril around a support ?

12. Name one nitrogenous waste present in urine. What is the basic filtration unit of kidney called ? How is the amount of urine produced regulated ?

13. Mention the cause and symptom of disease goiter. How it can he controlled ? Correlate this disease with an endocrine gland.

14. Define 1 ohm resistance. A student has a resistance wire of 1 ohm. If the length of this wire is 50 cm, to what length he should stretch it uniformly so as to obtain a wire of 4 Si resistance? Justify your answer.

15. What change in the galvanometer needle would you observe when a strong I ar magnet is :
(i) kept stationary at a distance from the coil ?
(ii) pushed towards the coil ?
(iii) pulled away from the coil ? Give reason to justify your answer.



16. A current of 0.2 A flows through a circuit containing a battery and a resistor R. When a wire of resistance 2 ohms is connected in parallel with the resistor, the current in the circuit becomes 1.2 A. Find the resistance of the resistor R.

17. Recently when Government decided to set up a nuclear power plant in an area, NGOs and local people raised their voice against it. They demanded that the Government should assure safety measures before setting up such a plant and Government assured them of it. (a) Explain the value exhibited by people of the area. (b) List any two concerns of the people for which they were demanding safety measures.

18. I List any three parameters on the basis of which a source of energy can be categorised as a good source of energy ?

19. Identify the type of chemical reaction in the following statements and define each of them :
(i) Digestion of food in our body (ii) Rusting of iron (iii) Heating of manganese dioxide with aluminium powder (iv) Blue colour of copper sulphate solution disappears when iron filings are added to it
(v) Dilute hydrochloric acid is added to sodium hydroxide solution to form sodium chloride and water

20. The blue colour of crystals of a substance changed on heating in a closed test tube but the colour was regained after sometime on cooling. Name the substance and write its chemical formula. Explain the phenomenon involved.

(b) Write name and chemical formula of two such compounds whose one formula unit is associated with 10 and 2 water molecules respectively.

21 (a) State three common features of respiratory organs of animals. (b) Write two points of difference between aerobic respiration and anaerobic respiration.

22. (a) Define Ohm's law. (b) Draw graph between V and I (c) A piece of wire having resistance R is cut into four equal parts Compare the resistance of each part with the resistance of the original wire. (ii) If the four parts are connected in parallel, compare the equivalent resistance with the resistance of the original wire.

23.(a) What is an electromagnet ? (b) List any two uses of electromagnet. (c) With the help of a labelled diagram explain how an electromagnet is made. (d) Why do we prefer to use soft iron core for making an electromagnet?

24. What is meant by electric current ? Name and define its SI unit. In a conductor electrons are flowing from B to A.
What is the direction of conventional current? Give justification for your answer.
A steady current of 1 ampere flows through a conductor. Calculate the number of electrons that flows through any section of the conductor in 1 second. (Charge on electron =1.6 x 10-19 coulomb)

SECTION - B

25. A drop of lemon juice when poured on pH paper the observation is:
(a) pH paper becomes yellow-orange (b) pH paper becomes red
(c) pH paper becomes green (d) paper becomes blue

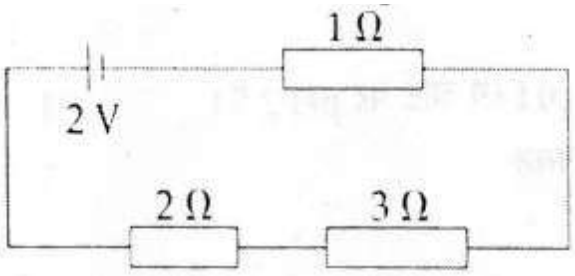
26. Identify the sample, if its colour on pH matches with pH 2 n pH colour chart
(a) Ethanoic acid (b) sodium hydroxide (c) HCl (d) Water

27. The colour of zinc metal is
(a) Light grey (b) Reddish brown (c) Black (d) Light yellow

28. Parinita took three metals labelled P, Q and R. she carried out displacement reactions with their salt solutions and found that P is less reactive than R but more reactive than Q. The metals P, Q and R respectively could be :
(a) Zinc, Copper, Aluminium (b) Copper, Zinc, Aluminium
(c) Aluminium, copper, zinc (d) Copper, Aluminium, Zinc

29. A solution of $FeSO_4$ in water is:
(a) colourless (b) blue (c) light green (d) brown

30. In a circuit diagram shown below, three resistors are connected in series. The Potential difference across the 3 Ω resistor is :
(a) 1/9 V (b) ½ V (c) 1 V (d) 2 V



31. When two or more resistors are connected in parallel to a battery :
(a) The Voltage across each resistor is the same
(b) The total current flowing from the battery equals to the sum of the currents flowing through each resistor
(c) The equivalent resistance of the combination is less than the resistance of any one of the resistors
(d) All of the above

32. Leaves are destarched by keeping the plant in :
(a) 10-12 hours in night (b) 10-12 hours in day (c) 2 hours in sunlight (d) 2 hours in night

33 In an experimental set up to demonstrate that CO2 is given out during respiration', the KOH solution should be kept in :
(a) the beaker (b) the bent tube (c) with the seeds in the flask (d) in a small test tube in the flask

34 (i) While studying the combination reaction on adding water to quick lime, name the product formed and write its colour.
(ii) While studying the decomposition reaction by heating ferrous sulphate crystals in a test-tube, a product is formed in the test - tube: Name the product and write its colour.

35. To study ohm's law the value of electric current (I) corresponding to potential difference (V) across a resistor are given below:
Potential difference (V) in volt: 0.5 1.0 1.5 2.0 2.5
Electric current (I) in mA : 10 20 30 40 50
(a) Plot the graph between V and I. (b) Calculate the resistance of the resistor by graph.

36. A student prepared the temporary mount of stained leaf peel. After observing the slide under microscope, he drew the following sketch. Identify and name the parts labelled as A, B, C and D.