

which one as south pole?

(iii) In what ways an electromagnet is better than a permanent magnet?

Section – B

- What impact will it have if all the organisms in one trophic level are killed?
- Name an organism in which asexual reproduction takes place through budding.
- Name the plant hormones responsible for the following:
 - Elongation of cells.
 - Growth of stem.
- Why are traits acquired during the life time of individual not inherited?
- Mention one function for each of these hormones :
 - Thyroxin
 - Insulin
 - Adrenaline
 - Growth hormone
- What is the advantage of having four chambered heart?
- Why do we insist upon “sustainable natural resource management”? Give any three reasons.
- What are the adaptations of leaf for photosynthesis?
- (i) What are the differences between aerobic and anaerobic respiration? Name some organisms that use the anaerobic mode of respiration.
(ii) Describe the structure and functioning of nephrons.

Or

- How are water and minerals transported in plants?
- Explain the process of nutrition in Amoeba.



Er Manish Bhadoria's

 Strong Foundation for a bright future

Address: Nimbalkar's Goth – 2, Near Balaji Travels Office, Kampoo, Lashkar, Gwalior
 Ph: 6450282, 2424758 Mob: 92294 97622
 Email: manish_bhadoria@yahoo.co.in

Science

(Sample Paper - II)

Time: 2½ hours

Max Marks: 60

Marking Scheme

Q. Nos.	1-6, 19-21	7-12, 22-24	13-16, 25, 26	17-18, 27
Marks	1	2	3	5

Section – A

- Name a mirror that can give an erect and enlarged image of an object.
- Write the chemical equation to represent the reaction taking place between sodium metal and cold water.
- Why is the difference in colours of the Sun observed during sunrise/sunset and noon?
- Why should we add acid into water for dilution and not water into acid?
- Why is tungsten the preferred element for filament of electric lamps?
- Write the name of the compound in adjoining figure.

$$\begin{array}{ccccccc} & \text{H} & \text{H} & \text{H} & \text{H} & \text{O} & \\ & | & | & | & | & || & \\ \text{H} & - \text{C} & - \text{C} & - \text{C} & - \text{C} & - \text{C} & - \text{OH} \\ & | & | & | & | & & \\ & \text{H} & \text{H} & \text{H} & \text{H} & & \end{array}$$
- State the factors on which the resistance of a metallic wire depends. Explain how the resistance depends on the factors stated by you.
- Draw the pattern of magnetic field lines around a bar magnet. No two magnetic force lines ever intersect each other. Why?
- A solution of a substance 'X' is used for white washing.
 - Name the substance 'X' and write its formula.
 - Write the reaction of the substance 'X' named in (i) above

with water.

10. Differentiate between roasting and calcination processes used in metallurgy. Give an example of each.
11. What is biogas? Which is the main constituent of biogas? List its any four characteristics on account of which it is considered an ideal fuel.
12. Why is there a need for harnessing non-conventional sources of energy? How can energy be harnessed from the sea in different ways?
13. (i) Why detergents are better cleansing agents than soaps? Explain.
(ii) What is saponification? Write the reaction involved in this process.
14. Explain the structure and functioning of Human eye. How are we able to see nearby as well as distant objects?
15. Salt A commonly used in bakery products on heating gets converted into another salt B which itself is used for removal of hardness of water and a gas C is evolved. The gas C, when passed through lime water, turns it milky. Identify A, B and C. Also write the chemical equations involved in the above processes.
16. A convex lens of focal length 40 cm is placed in contact with a concave lens of focal length 25 cm. What is the focal length and nature of this combination?
17. An element is placed in 2nd Group and 3rd Period of the Periodic Table, burns in presence of oxygen to form a basic oxide.
 - (a) Identify the element.
 - (b) Write the electronic configuration.
 - (c) Write the balanced equation when it burns in the presence of air.
 - (d) Write a balanced equation when this oxide is dissolved in water.
 - (e) Draw the electron dot structure for the formation of this oxide.

Or

Atomic numbers of a few elements are given below:

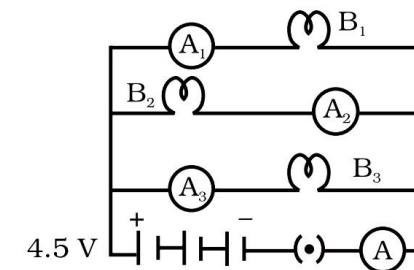
10, 20, 7, 14

(a) Identify the elements.

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- (b) Identify the Group number of these elements in the Periodic Table.
- (c) Identify the Periods of these elements in the Periodic Table.
- (d) What would be the electronic configuration for each of these elements?
- (e) Determine the valencies of these elements.

18. (i) B_1 , B_2 and B_3 are three identical bulbs connected as shown in Figure. When all the three bulbs glow, a current of 3A is recorded by the ammeter A.



- (a) What happens to the glow of the other two bulbs when the bulb B_1 gets fused?
 - (b) What are the reading of A_1 , A_2 , A_3 and A when the bulb B_2 gets fused?
 - (c) How much power is dissipated in the circuit when all the three bulbs glow together?
- (ii) An electric refrigerator rated 400 W operates 8 hour/day. What is the cost of the energy to operate it for 30 days at Rs 3.00 per kWh?

Or

(i) Draw the pattern of lines of force due to a magnetic field through and around a current carrying loop of wire. How would the strength of the magnetic field produced at the centre of the circular loop be affected if:

- (a) the strength of the current passing through the loop is doubled?
- (b) the radius of the loop is reduced to half of the original radius?

(ii) When a current is passed through a solenoid, it becomes a magnet. Which end of the solenoid behaves like its north pole and

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