SAMPLE Paper 2

[Easy Concept

Time Allowed : 3 hrs. *Maximum Marks :* 80

Questions 1-2 (1 Mark), 3-5 (2 Marks), 6-15 (3 Marks), 16-21 (5 Marks), 22-27 (2 Marks)

SECTION-A

1. Hydrogen has been used as a rocket fuel. Would you consider it a cleaner fuel than CNG? Justify.
2. Define one Dioptre of power of a lens.
3. State the observation made by Oersted on the basis of his experiment with current carrying conductors.
4. Why the cord of an electric heater does not glow while the heating element does?
5. Name the following:
   (*a*) A metal which is preserved in Kerosene.
   (*b*) A lustrous coloured non- metal.
   (*c*) A metal which can melt while kept on palm.
   (*d*) A metal which is poor conductor of heat.
6. (*a*) Name two tissues that provide control and coordination in multicellular animals.
   (*b*) What is synapse?
   (*c*) Define 'Reflex action'

   Or

   Which part of the brain controls involuntary actions? Write the function of any two regions of it.
7. State what happens when:
   (*a*) Hydrated copper sulphate is heated.
   (*b*) Gypsum is heated at 373 K.
   (*c*) Chlorine is passed through dry slaked lime.
   Also write the chemical equation in each case.
8. An electric lamp of resistance 100 Ω, a toaster of resistance 50 Ω and a water filter of resistance 500 Ω are connected in parallel to a 220 V source. What is the resistance of an electric iron connected to the same source that takes as much current as all the three appliances and what is the current that passes through it?
9. (*a*) What is Universal indicator?
   (*b*) Write the chemical equation involved in the preparation of Sodium hydroxide. Name the process.
10. Write chemical equations for the reactions taking place when:
    (*a*) Magnesium reacts with dil. Hydrochloric acid.
    (*b*) Iron reacts with steam.
    (*c*) Copper is strongly heated in air.
11. In Mendel's experiment on pea plant, find the contrasting trait when:
    (*a*) the position of flower is terminal.
    (*b*) the flower is can be of any colour in colour.
    (*c*) shape of pod is constricted.

*12. Once Sameer observed a plant kept in his room was bending and growing towards the window's direction only. He asked his teacher the reason behind the bending of the plant towards the window. Answer the following based on Sameer's observation:

(*a*) Name the phenomenon observed.

(*b*) How does this phenomenon take place?

(*c*) What are the values shown by Sameer?

13. Distinguish between biodegradable and non-biodegradable substances with suitable examples.

14. Explain different ways to induce current in a coil?

Or

List three methods of producing magnetic fields.

15. Elaborate three instances where human intervention saved the forests from destruction.

16. (*a*) Define homologous series of organic compounds. Mention any two characteristics of homologous series.

(*b*) Describe a chemical test to distinguish an alcohol and a carboxylic acid group.

(*c*) Identify the functional group in Butanone and Pentanal.

17. Which element has:

(*a*) twice as many electrons in its second shell as in its first shell?

(*b*) a total of two shells, with three electrons in its valence shell?

(*c*) a total of three shells, with four electrons in its valence shell?

(*d*) the electronic configuration 2,8,2?

(*e*) two shells, both of which are completely filled with electrons?

Or

(*a*) Give the points of differences between Mendeleev's Periodic table and Modern form of Periodic table.

(*b*) State Dobereiner's Law of Triads with a suitable example.

18. (*a*) State the function of the following in the alimentary canal:

(*i*) Liver (*ii*) Gall bladder (*iii*) Villi.

(*c*) Complete the following table

S.No.	Name of the gland	Name of hormone	Function
1	Thyroid	.....	Regulates metabolism of fat, protein and carbohydrates.
2	.....	Insulin	Regulates blood sugar level.
3	pitutiary	.....	.....

19. (*a*) Identify the asexual method of reproduction in each of the organisms:

(*i*) rose (*ii*) yeast (*iii*) planaria.

(*b*) What is fragmentation? Name a multicellular organism which reproduces by this method.

20. (*a*) State the cause of refraction of light.

(*b*) Name the spherical mirror used as:

(*i*) Shaving mirror (*ii*) Reflector in search– lights.

(*c*) For which position of the object, a lens form a virtual and erect image? Explain with the help of the ray diagram.

* Value Based Question

21. What is meant by scattering of light? Mention the factors on which it depends? Explain why
(a) The colour of clear sky is blue.
(b) An Astronaut in space finds sky to be dark.
(c) Sun looks reddish at the time of sunrise and sunset.

SECTION-B

22. Two resistors having resistances of 4 Ω and 6 Ω respectively are connected in a circuit. It was found that the total resistance in the circuit is less than 4 Ω. In what way the resistances would has been connected?
23. What are the various parts of an embryo of a dicot seed?
24. What is the nature of an image formed by a thin convex lens for a distant object? What change do you expect if the lenses were rather thick?
25. Account for:
(a) What is the role of KOH in the experiment of release of carbon dioxide during respiration?
(b) Why do we use germinating seeds in this experiment?
26. Why does the colour of copper sulphate solution change when an iron nail is dipped in it? Write the chemical equation for it.
27. On opening the soda water bottle, the dissolved CO_2 comes out. Would the pH of the solution increase or decrease as the gas comes out? Explain your answer the either way.