

**KENDRIYA VIDYALAYA SANGATHAN**  
**AHMEDABAD REGION**  
**PRE BOARD- II (2018-19)**

**CLASS X**  
**SCIENCE**

**TIME:3 HOURS**

**M.M.:80**

**General Instructions:**

1. All questions are compulsory.
2. The question paper comprises of **Five Sections, A, B, C, D & E**. You are to attempt all the sections.
3. Internal choice is given in section B, C, D & E
4. Question number **1 & 2** in **Section-A** are **one mark** question. These are to be answered in **one word** or in **one sentence**.
5. Question numbers **3 to 5** in **Section-B** are **two marks** questions. These are to be answered in about **30 words** each.
6. Question numbers **6 to 15** in **Section-C** are **three marks** questions. These are to be answered in about **50 words** each.
7. Question numbers **16 to 21** in **Section-D** are **five marks** questions. These are to be answered in about **70 words** each.
8. Question numbers **22 to 27** in **Section-E** are questions based on practical skills and are **two marks** questions.

**SECTION - A**

1. Which part of brain maintains the equilibrium and posture of the body? 1
2. What is the role of the seminal vesicles and prostate glands? 1

**SECTION - B**

3. What are the properties of an ideal fuel? (four points) 2
4. The position of three elements in the periodic table are shown below:

| Group 1 | Group 18 |
|---------|----------|
| --      | --       |
| --      | A        |
| --      | --       |
| B       | C        |

Giving reasons, explain the following:

- (a) Element A is a non metal.
- (b) Element C has a smaller atomic size than element B.

**OR**

Write the two achievements of Mendeleev's Table.

2

5. An object is placed at a distance of 30 cm from an optical centre of convex lens of focal length 10 cm. List any four characteristics of the image formed by the lens and also draw ray diagram. 2

**SECTION - C**

6.(a) What current is drawn from the line if the supply voltage is 220 V through a conductor of resistance of 20 ohm? 3

(b) On what factors does the resistance of a conductor depend? 3

7. Write the name of the following reactions:

- i)  $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$
- ii) Respiration in organisms
- iii) Rusting of iron

**OR**

Balance the following reactions:

- (i) Aluminium + Copper chloride  $\rightarrow$  Aluminium chloride + Copper
- (ii) Barium chloride react with potassium sulphate to give potassium chloride and a precipitate of barium sulphate
- (iii) Hydrogen sulphide gas burns in air to give water and sulphur dioxide 3

8. Explain the action of dilute hydrochloric acid on the following with chemical equation:

(i) Magnesium ribbon (ii) Sodium hydroxide (iii) Crushed egg shells 3

9. An atom has electronic configuration 2, 8, 4

(a) What is the atomic number of this element?

(b) What is its valency?

(c) To which of the following elements would it be chemically similar and why? Be(4), O(8), C(6)

Justify your answer. (Atomic number are given in brackets) 3

10. Draw a diagram of human alimentary canal & label the small intestine, stomach, liver & large intestine.

**OR**

What are the different ways in which glucose is oxidized to provide energy in various organisms? 3

11. (i) Write the function performed by testis in human beings?

(ii) If a woman is using a copper T. Will it help in protecting her from sexually transmitted diseases?

(iii) How does embryo get nourishment inside the mother's body? 3

12. A tall pea plant ( TT) is cross bred with dwarf pea plant(tt)  
 (i)What is the expected height of the plants of their F1 progeny?  
 (ii)What will be the percentage of dwarf plants in F2 progeny, when the plants of F1 progeny were self pollinated?  
 (iii) State the expected ratio of the genotype of TT & Tt in the F2 progeny? 3
13. (a) What factors could lead to rise a new species?  
 (b) Name the plant on which Mendel performed his experiments.  
 (c) Why did he select that specific plant for his experimental studies?  
 (Any 2 reasons)

OR

- (a) Write the two differences between homologous and analogous organs.  
 (b) List the two methods of determining the age of fossils. 3
14. An object 4 cm in size, is placed at 25 cm in front of a concave mirror of focal length 15 cm .At what distance from the mirror should a screen be placed in order to obtain the sharp image ? Find the nature and the size of the image. 3
15. A coil of insulated copper wire is connected to galvanometer .What will happen if a bar magnet is (i)pushed into the coil (ii)withdrawn from inside the coil (iii)held stationary inside the coil? 3

#### Section -D

16. An organic compound 'A' is a constituent of wine and beer and is also used as fuel in spirit lamp. Compound 'A' on heating with alkaline potassium permagnate gives another compound 'B' which turns blue litmus to red. Compound 'A' & 'B' combine in presence of conc. sulphuric acid to give sweet smelling compound 'C' .Identify the compounds A,B & C also write the equations involved in the reactions.

OR

- An organic compound A of molecular formula  $C_2H_6O$  on heating with excess of conc sulphuric acid gives compound B of molecular formula  $C_2H_4$ . Compound B on reduction gives compound of molecular formula  $C_2H_6$ .  
 (i)Name A,B & C  
 (ii)Write chemical equation for the conversion of A to B  
 (iii)What is the role of conc. sulphuric acid in the above equation? 5

17. (i) Give an example of a metal which -  
 (a) Is a liquid at room temperature.  
 (b) Can be easily cut with a knife.
- (ii) Give reasons-  
 (a) Sodium and potassium are kept immersed in kerosene oil?  
 (b) Ionic compounds have high melting points?

(c) Carbonate and sulphide ores are usually converted into oxides during the process of extraction. 5

- 18.** (i) Why does the sky appear dark instead of blue to an astronaut?  
(ii) Explain why are danger signal lights red in colour.  
(iii) What is the near point and far point of eye with normal eye of vision?

OR

(I) A student sitting at the back bench in a class has difficulty in reading. What could be the possible defect of vision? Draw ray diagram to illustrate the image formation of blackboard when he is seated at the back seat. How this defect can be corrected?

(II) Explain why the planet do not twinkle. 5

- 19.** (i) Draw the pattern of magnetic field lines through bar magnet  
(ii) Why two magnetic field line don't intersect with each other.  
(iii) How the strength of magnetic field in a loop carrying current would increase or decrease when -  
(a) Turns of the loop is increased?  
(b) Strength of current through the loop is decreased? 5

- 20.** (i) Write any two plant hormones and their function.  
(ii) Name the hormone secreted from the endocrine glands for following functions:  
A) To regulate sexual secondary characters in human male.  
B) To regulate blood sugar level.  
C) To regulate growth and development of the body. 5

- 21.** (i) Why is damage to the ozone layer a cause for concern?  
(ii) Write the two advantages and two disadvantages of solar cooker.  
(iii) Why is sustainable management of natural resources necessary?

OR

- (i) If 1000 j of solar energy is given to plant in three level tropic chain. What amount of energy will reach up to third level.  
(ii) What is meant by biological magnification?  
(iii) What was Chipko Andolan? How did this Andolan ultimately benefit the local people and the environment? 5

## SECTION E

22. While performing a reaction of hydrochloric acid with zinc metal a student observed that a gas is evolved which burns with POP sound. Name the gas evolved and write the balance equation for this chemical reaction. 2
23. Ethanoic acid when added to the solution of substance **X** causes brisk effervescence. The gas evolved when passes through lime water makes it milky. Identify:- 2
- (a) Substance **X** (b) Gas evolved
24. Ram followed the following procedure for staining the temporary mount of leaf peel on the slide. Write the correct sequence of experiment. 2
- (a) To put a single drop of glycerine on leaf peel.  
(b) Observe the slide under microscope  
(c) To put a single drop of stain on leaf peel and wash it with water.  
(d) Cover the leaf peel with cover slip
25. Draw the well labelled diagram of budding in yeast. 2
- OR
- Draw the well labelled diagram showing the structure of embryo of a dicot seed. 2
26. To find out the resultant resistance of two resistors when connected in series the mean value of resistance of first resistor ( $R_1$ ) is 2 ohm and the mean value of resistance of second resistor ( $R_2$ ) is 6 ohm. Find out the resultant resistance (**R**) of two resistors in series. 2
27. During dispersion white light split up into seven colours. Which light is deviated most and why? 2
- OR
- What would happen to light ray when it travels from rarer to denser medium. Explain and draw the well labelled diagram. 2