KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION

SAMPLE PAPER 08 (2017-18)

SUBJECT: SCIENCE (086)

BLUE PRINT : CLASS X

UNIT	Chapter	VSA (1 mark)	SA – I (2 marks)	SA – II (3 marks)	LA (5 marks)	Practical Based Questions	Total	Unit Total
Chemical Substances - Nature and Behaviour	Chemical Reactions and Equations	--	--	3(1)	--	--	**3(1)**	**25(8)**
	Acids, Bases and Salts	--	--	**3(1)***	--	2(1)	**5(2)**	
	Metals and Non-metals	--	--	--	5(1)	--	**5(1)**	
	Carbon and its compounds	--	--	--	**5(1)***	2(1)	**7(2)**	
	Periodic Classification of Elements	--	2(1)	3(1)	--	--	**5(2)**	
World of Living	Life Process	1(1)	--	**3(1)***	--	2(1)	**6(3)**	**23(9)**
	Control and Coordination	--	--	--	5(1)	--	**5(1)**	
	How do organisms reproduce?	1(1)	--	3(1)	--	2(1)	**6(3)**	
	Heredity and Evolution	--	--	6(2)	--	--	**6(2)**	
Natural Phenomena	Light - Reflection and Refraction	--	2(1)	3(1)	--	2(1)	**7(3)**	**12(4)**
	The Human Eye and the colourful world	--	--	--	5(1)	--	**5(1)**	
Effects of Current	Electricity	--	--	3(1)	--	**2(1)***	**5(2)**	**13(4)**
	Magnetic Effects of Electric Current	--	--	**3(1)***	5(1)	--	**8(2)**	
Natural Resources	Sources of energy	--	2(1)	--	--	--	**2(1)**	**7(2)**
	Our Environment	--	--	--	**5(1)#**	--	**5(1)**	
	Management of Natural Resources	--	--	--		--		
	Total	**2(2)**	**6(3)**	**30(10)**	**30(6)**	**12(6)**	**80(27)**	**80(27)**

Note: * - Internal Choice Questions of same chapter.
 # - Internal Choice Questions of two chapters

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SAMPLE PAPER 08 (2017-18)

SUBJECT: SCIENCE **MAX. MARKS : 80**

CLASS : X **DURATION : 3 HRS**

General Instructions:

1. All questions are compulsory.
2. The question paper comprises of **two Sections, A** and **B.** You are to attempt both the sections.
3. All questions of **Section-A** and **Section-B** are to be attempted separately.
4. There is an internal choice in three questions of three marks each, two question of five marks and one question of Practical Based Question.
5. Question number **1 to 2** in **Section-A** are **one mark** question. These are to be answered in **one word** or in **one sentence**.
6. Question numbers **3 to 5** in **Section-A** are **two marks** questions. These are to be answered in about **30 words** each.
7. Question numbers **6 to 15** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.
8. Question numbers **16 to 21** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
9. Question numbers **22 to 27** in **Section-B** are questions based on practical skills and are **two marks** questions.

SECTION – A

1. Name an enzyme secreted from gastric glands in stomach that acts on proteins.

2. Why is DNA copying necessary during reproduction?

3. Why is bio-gas considered an ideal domestic fuel?

4. An element 'M' has atomic number 11.
(a) Write its electronic configuration.
(b) State the group to which 'M' belongs.
(c) Is 'M' a metal or a non-metal?
(d) Write the formula of its chloride.

5. What is the minimum number of rays required for locating the image formed by a concave mirror for an object? Draw a ray diagram to show the formation of a virtual image by a concave mirror.

6. Name the electric device that converts electrical energy into mechanical energy. Draw the labelled diagram and explain the principle involved in this device.

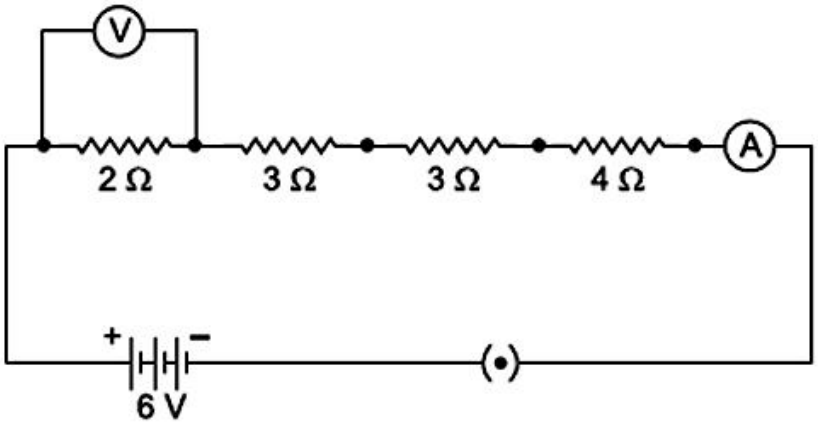
OR

(a) Distinguish between the terms "overloading and short circuiting" as used in domestic circuits.
(b) Why are the coils of electric toasters made of an alloy rather than a pure metal?

7. Write balanced equations for the following, mentioning the type of reaction involved.
(a) Aluminium + Bromine → Aluminium bromide
(b) Calcium carbonate → Calcium oxide + Carbon dioxide
(c) Silver chloride → Silver + Chlorine

8. Why is atomic number considered to be a more appropriate parameter than atomic mass for the classification of elements in a periodic table? How does the metallic character of elements vary as we move (i) from left to right in a period, and (ii) top to bottom in a group in the modern periodic table? Give reasons to justify your answers.

9. Find out the reading of ammeter and voltmeter in the circuit given below :



10. Draw a diagram of human alimentary canal and label on it: Oesophagus, Gallbladder, Liver and Pancreas.

OR

Draw a diagram of excretory system in human beings and label on it: Aorta, vena cava, urinary bladder, urethra.

11. List any three factors and mention how they could lead to the rise of a new species.

12. What are fossils? How do they act as an evidence for organic evolution?

13. (a) If the image formed by a mirror for all positions of the object placed in front of it is always diminished, erect and virtual, state the type of the mirror and also draw a ray diagram to justify your answer.
(b) Define the radius of curvature of spherical mirrors. Find the nature and focal length of a spherical mirror whose radius of curvature is +24 cm.

14. (a) The pH of soil A is 7.5 while that of soil B is 4.5. Which of the two soils A or B should be treated with powdered chalk to adjust its pH and why?
(b) Explain how the pH change in the river water can endanger the lives of aquatic animals like fish?

OR

(a) State the chemical properties on which the following uses of baking soda are based:
(i) as an antacid
(ii) as soda-acid fire extinguisher
(iii) to make bread and cake soft and spongy.
(b) How washing soda is obtained from baking soda? Write balanced chemical equation.

15. List three techniques that have been developed to prevent pregnancy. Which one of these techniques is not meant for males? How does the use of these techniques have a direct impact on the health and prosperity of a family?

16. (a) What is a magnetic field? How can the direction of magnetic field lines at a placed by determined?
(b) State the rule for the direction of the magnetic field produced around a current carrying conductor. Draw a sketch of the pattern of field lines due to a current carrying conductor. Draw a sketch of the pattern of filed lines due to a current flowing through a straight conductor.

17. (a) What are hydrocarbons? Write the general formula of (i) saturated hydrocarbons, and (ii) unsaturated hydrocarbons and draw the structure of one hydrocarbon of each type.
(b) Explain, giving reason, why carbon neither forms C^{4+} cations nor C^{4-} anions, but forms covalent compounds which are bad conductors of electricity and have low melting point and low boiling point.

OR

(a) Write the structural formula of ethanol. What happens when it is heated with excess of conc. H_2SO_4 at 443 K? Write the chemical equation for the reaction stating the role of conc. H_2SO_4 in this reaction.
(b) Distinguish between esterfication and saponification reaction with the help of the chemical equations for each. State one use of each (i) esters, and (ii) saponification process.

18. (a) Draw neat diagram of human brain and label on it the following parts: (i) Midbrain (ii) Pituitary gland
(b) How is brain protected from injury and shock?
(c) Name two main parts of hind brain and state the functions of each.

19. (a) Write the functions of each of the following parts of the human eye:
(i) Cornea (ii) Iris (iii) Crystalline (Eye) lens (iv) Ciliary muscles (v) Retina
(b) A person is unable to see distinctly the objects closer than 1 m. Name the defect of vision he is suffering from. Draw ray diagrams to illustrate the cause of the defect and its correction by suitable lens.

20. (a) Distinguish between 'roasting' and 'calcination'. Which of these two is used for sulphide ores and why?
(b) Write a chemical equation to illustrate the use of aluminium for joining cracked railway lines.
(c) Name the anode, the cathode and the electrolyte used in the electrolytic refining of impure copper.

21. (a) Water is an elixir of life, a very important natural resource. Your Science teacher wants you to prepare a plan for a formative assessment activity, "How to save water, the vital natural resource". Write any two ways that you will suggest to bring awareness in your neighbourhood, on 'how to save water'.
(b) Name and explain any one way by which the underground water table does not go down further.
(c) Explain two main advantages associated with water harvesting at the community level.

OR

(a)What is meant by food chain?
(b) Give reason to justify the following:
(i) The existence of decomposers is essential in a biosphere.
(ii) The number of trophic levels in a food chain is limited.
(iii) Flow of energy in a food chain is unidirectional.

SECTION – B

22. If you take a pinch of sodium hydrogen carbonate powder in a test-tube and add drop-by-drop acetic acid to it, what would you observe immediately? List any two main observations.

23. Draw in sequence (showing the four stages), the process of binary fission in Amoeba.

24. Mention the essential material (chemicals) to prepare soap in the laboratory. Describe in brief the test of determining the nature (acidic/alkaline) of the reaction mixture of saponification reaction.

25. You have to perform the experiment, "To identify the different parts of an embryo of a gram seed." Describe the procedure that you would follow.

26. The magnification of an image formed by a lens is −1. If the distance between the object and its image is 60 cm, what is the distance of the object from the optical centre of the lens? Find the nature and focal length of the lens. If the object is displaced 20 cm towards the optical centre of the lens, where would the image be formed and what would be its nature? Draw a ray diagram to justify your answer.

27. Two lamps, one related 60 W at 220 W at 220 V and the other 40 W at 220 V, are connected in parallel to the electric supply at 220 V. Draw a circuit diagram to show the connections. Calculate the current drawn from the electric supply.

OR

Draw a schematic diagrams of an electric circuit comprising of 3 cells and an electric bulb, ammeter, plug-key in the ON mode and another with same components but with two bulbs in parallel and a voltmeter across the combination.