KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION
SAMPLE PAPER 03 FOR PERIODIC TEST III EXAM (2017–18)

SUBJECT: SCIENCE (086)

<u>BLUE PRINT : CLASS X</u>

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	--	--	**3(1)***	--	2(1)	**5(2)**	**23(9)**
	Control and Coordination	1(1)	--	--	5(1)	--	**8(3)**	
	How do organisms reproduce?	1(1)	--	3(1)	--	2(1)	**4(2)**	
	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	Our Environment	--	2(1)	--	5(1)#	--	**7(2)**	**7(2)**
	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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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 and two question of five marks.
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 the part of the neuron: (i) where information is acquired (ii) through which information travels.

2. List two functions performed by the testis in human beings.

3. List four characteristics of the images formed by plane mirrors.

4. Why we say energy flow in the biosphere is unidirectional ?

5. 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.

6. Write the balanced equations for the following reactions and identify the type of reaction in each case:
    (a) Silver Nitrate (aq) + Potassium iodide (aq) $\rightarrow$ Silver iodide (s) + Potassium Nitrate (aq)
    (b) Potassium Chlorate (s) $\xrightarrow{\Delta}$ Potassium chloride (s) + Oxygen (g)

7. How many groups and periods are there in the modern periodic table? How do the atomic size and metallic character of elements vary as we move : (a) down a group and (b) from left to right in a period

8. Name any three glands associated with digestion in humans. Write the names of enzymes secreted by them.
    OR
    Write three points of difference anaerobic respiration and aerobic respiration.

9. Explain budding in hydra with the help of labelled diagrams only.

10. How are fossils formed? Describe, in brief two methods of determining the age of fossils.

11. To construct a ray diagram we use two rays of light which are so chosen that it is easy to determine their directions after reflection from the mirror. Choose these two rays and state the path of these rays after reflection from a concave mirror. Use these two rays to find the nature and position of the image of an object placed at a distance of 15 cm from a concave mirror of focal length 10 cm.

12. Which three chemical substances are obtained when electricity is passed through an aqueous solution of brine? Write one industrial use of each.

<div align="center">**OR**</div>

(a) Name the compound which is obtained from baking soda and is used to remove permanent hardness of water.
(b) Write its chemical formula.
(c) What happens when it is recrystallised from its aqueous solution?

13. (a) Explain with a reason whether the field will be stronger at the centre of current carrying loop or near the circumference of the loop.
(b) Magnetic field lines are shown in the given diagram. A student makes a statement that magnetic field at X is stronger than at Y. Justify this statement. Also redraw the diagram and mark the direction of magnetic field lines.
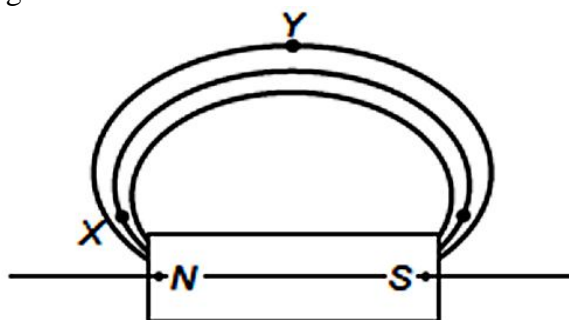
<div align="center">**OR**</div>

(a) Explain, why fuse wire is made of a tin-lead alloy and not copper?
(b) A domestic circuit has 5A fuse. How many bulbs of rating 100W, 220V can be safely used in this circuit? Justify your answer.

14. (a) Define electric power. State its unit. Also derive formula of power $P = V \times I$
(b) Which will have higher resistance: a 50 W lamp bulb or a 25 W lamp bulb and by how many times?

15. (i) Planaria, insects, octopus and vertebrates all have eyes. Can we group eyes of these animals together to establish a common evolutionary origin? Justify your answer.
(ii) "Birds have evolved from reptiles" State evidence to prove the statement.

16. How is the method of extraction of metals high up in the reactivity series different from that for metals in the middle? Why the same process cannot be applied for them? Explain giving equations, the extraction of sodium.

17. Describe the activity with labelled diagram to show that a magnetic field is generated around a current carrying conductor. On the basis of above mentioned activity, list the factors on which magnitude of magnetic field produced at a point depends and also explain the nature of this dependence.

18. Two children went to the park with their grandfather. On reaching the park, the children joined others to play, while their grandfather after taking 3 rounds of the park, sat on the chair, took out newspaper from his bag and began to read with the help of his spectacle. After sometime, he realised that was too long to see the children, he looked around, but though he has worn spectacle, he couldn't see anything. He then realised that he had forgotten his other spectacle, which he used to see the faraway places, were left at home. He began calling them by their names, but due to the large distance, his voice was not reaching the children. Another man sitting beside him realised the problem and helped him to reach the children.

(a) Name the eye defect with which the grandfather was suffering from?
(b) Which type of spectacles should he wear, so as to avoid calling the other?
(c) Explain the cause of disease.
(d) What are the values shown by man, sitting next to the grandfather?
(e) Explain with the diagram.

19. (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?

20. A carbon compound X turns blue litmus to red and has a molecular formula $C_2H_4O_2$. Identify X and draw its structure. Write chemical equation for the reaction and name of the product formed in each case when X reacts with
(a) ethanol in the presence of conc. H_2SO_4
(b) sodium carbonate.

OR

(a) What are hydrocarbons? Give examples.
(b) Give the structural differences between saturated hydrocarbons and unsaturated hydrocarbons with two examples each.
(c) What is a functional group? Give examples of two different functional groups.

21. (a) What is meant by food chain? "The number of trophic levels in a food chain is limited." Give reason to justify this statement.
(b) "Energy flow in food chains is always unidirectional." Justify this statement. Explain how the pesticides enter a food chain and subsequently get into our body.

OR

(a) What is water harvesting? Mention any two water harvesting structures.
(b) What is a dam? Write two main advantages and two ill-effects of constructing a big dam.

SECTION – B

22. Aditi observed the temporary mount of a leaf peel under a compound microscope and found one part as an elliptical pore and the other kidney shaped. Name these parts.

23. To find the image-distance for varying object-distances in case of a convex lens, a student obtains on a screen a sharp image of a bright object placed very far from the lens. After that he gradually moves the object towards the lens and each time focuses its image of the screen.
1. In which direction – towards or away from the lens, does he move the screen to focus the object?
2. What happens to the size of image – does it increase or decrease?
3. What happen when he moves the object very close to the lens?

24. Name the type of asexual reproduction in which two individuals are formed from a single parent and the parental identity is lost. Draw the initial and the final stages of this type of reproduction. State the event with which this reproduction starts.

25. List two observations which you make when you add a pinch of sodium hydrogen carbonate to acetic acid in a test tube. Write chemical equation for the reaction that occurs.

26. Write the name and molecular formula of an organic compound having its name suffixed with '–ol' and having two carbon atoms in the molecule. With the help of a balanced chemical equation indicate what happens when it is heated with excess of conc. H_2SO_4.

27. State four factors that affect resistance.

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OR

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Study the following circuit and answer the questions that follow :
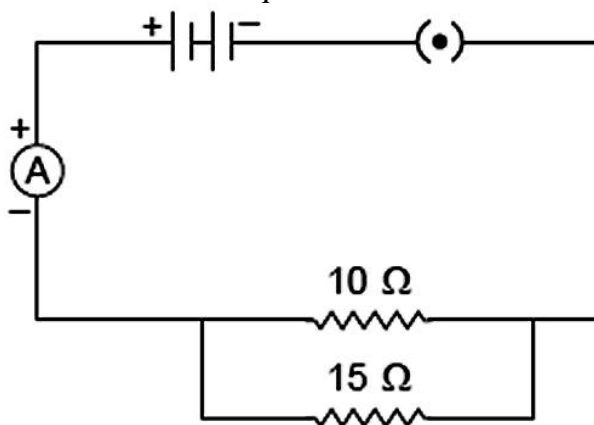
(a) State the type of combination of the two resistors in the circuit.
(b) What will be the potential difference across the above combination if applied potential in 6V?

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