

# KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION

## SAMPLE PAPER 05 (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) <sup>#</sup>	--	5(1)	
	Management of Natural Resources	--	--	--		--		
<b>Total</b>		<b>2(2)</b>	<b>6(3)</b>	<b>30(10)</b>	<b>30(6)</b>	<b>12(6)</b>	<b>80(27)</b>	<b>80(27)</b>

Note: \* - Internal Choice Questions of same chapter.

# - Internal Choice Questions of two chapters

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**SAMPLE PAPER 05 (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. How is self-pollination different from the process where pollen grains are transferred to the stigma of a different flower?
2. What are the functions of gastric glands present in the wall of the stomach?
3. How does the valency of elements vary (a) in going down a group, and (b) in going from left to right in a period of the periodic table?
4. Define fuel. List any two characteristics that you would look for in a good fuel.
5. List four properties of the image formed by a concave mirror, when object is placed between focus and pole of the mirror.
6. Differentiate between the following :
  - (a) Pollen tube and Style
  - (b) Fission in *Amoeba* and *Plasmodium*
  - (c) Fragmentation and Regeneration
7. The position of three elements A, B and C in the periodic table is shown below :

Group →	I	II	III	IV	V	VI	VII	VIII
Period ↓								
1								
2							C	
3	A	B						

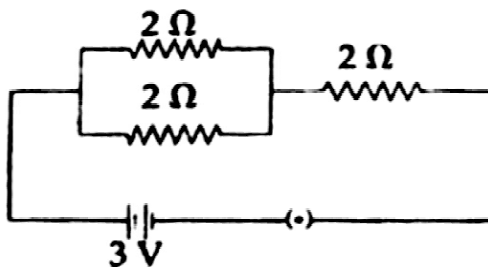
Giving reasons explain :

- (a) Element A is a metal.
- (b) Element B has larger atomic size than the element C.
- (c) Element C has a valency of one.

8. Give one example each of the following decomposition reactions. Write one balanced chemical equation in each case:
- The reaction which occurs on passing electric current.
  - The reaction which occurs in the presence of sunlight.
  - The reaction which occurs on heating of a substance.
9. A compound 'X' is a constituent of baking powder. It is used as an antacid. When 'X' is heated it gives out a gas 'Y' which, when passed through lime water turns it milky and salt 'Z' is formed which is the main constituent of washing powder. Identify X, Y and Z. Write the balanced chemical equations for the reactions involved.

**OR**

- A solution turns red litmus paper to blue. What can be pH of this solution?
  - 10mL of sodium hydroxide solution is completely neutralized by 8 mL of solution of hydrochloric acid. If we take 20 mL of the same solution hydroxide, what will be the amount of hydrochloric acid solution required to neutralized it?
  - What type of medicine is used for the treatment of indigestion?
10. State Ohm's law. Three resistors of  $2\Omega$  each are connected to a battery of 3 V as shown. Calculate the current drawn from the battery the battery and voltage across the  $2\Omega$  resistor.



11. (a) Mention effect of electric current on which the working of an electrical fuse is based.  
 (b) Draw a schematic labelled diagram of a domestic circuit which has a provision of a main fuse, meter, one light bulb and a socket.

**OR**

Why is pure iron not used for making permanent magnets? Name one material used for making permanent magnets. Describe how permanent magnets are made electrically.

12. Draw a diagram of the front view of human heart and label any six parts including at least two, that are concerned with arterial blood supply to the heart muscles.

**OR**

Draw a diagram of human respiratory system and label on it: (a) Diaphragm (b) Larynx

13. Darwin's theory of 'Survival of the fittest' states that only the fittest will survive.  
 (a) How will you relate the Darwin's theory to your day-to-day life?  
 (b) How will you make yourself fit for a particular work?

14. (a) What are monohybrid and dihybrid cross ?  
 (b) How Mendel proved that tallness is the dominant trait and dwarfness is recessive in a pea plant ?

15. Rohit wants to have an erect image of an object, using a converging mirror of focal length 40 cm.  
 (a) Specify the range of distance where the object can be placed in front of the mirror. Give reason for your answer.  
 (b) Will the image be bigger or smaller than the object ?  
 (c) Draw a ray-diagram to show the image formation in this case.

16. Draw a neat diagram of human brain and label on it the following parts: (i) Midbrain (ii) Pituitary gland (iii) Cerebellum (iv) Cerebrum
17. (a) What is an ecosystem? List its two main components. We do not clean natural ponds or lakes but an aquarium needs to be cleaned regularly. Why is it so? Explain.  
(b) "Energy flow in food chains is always unidirectional." Justify this statement.
- OR**
- (a) What is sustainable development? Suggest any one method to achieve it.  
(b) Explain giving example where active involvement of local people lead to efficient management of forest.  
(c) What was "Chipko Andolan"? How did this 'Andolan' ultimately benefit the local people and the environment?
18. (a) Differentiate between roasting and calcination. Explain the two with the help of suitable chemical equations. How is zinc extracted from its ore ?  
(b) Name two metals that can be used to reduce metal oxides to metals.
19. (a) A positively charged particle (alpha) projected towards west is deflected towards north by a magnetic field. State the direction of magnetic field. State the rule used by you to find the direction.  
(b) Mention the factors on which the strength of forces experienced by a current carrying conductor placed in a magnetic field depend.  
(c) Under what condition is the force experienced by a current carrying conductor placed in a magnetic field maximum?
20. (a) If a person wears lens of power  $-6D$  for distant vision and for correcting his near vision he needs a lens of  $+2D$ . Determine the focal length of the lenses in both the case.  
(b) Give reason for the following natural phenomenon :  
(i) Stars twinkle  
(ii) Planets do not twinkle  
(iii) Stars appear raised in the sky
21. (i) What are soaps ?  
(ii) Explain the formation of micelle during the cleaning action of soaps and draw the structure of micelle.  
(iii) Write the effect of soap in cleaning with hard water.

**OR**

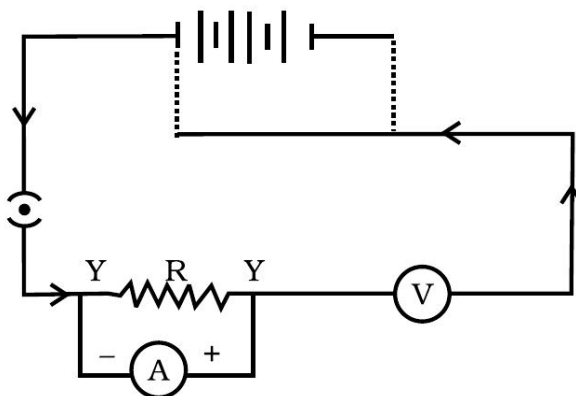
Give reasons for the following:

- (i) Element carbon forms compounds mainly by covalent bonding.
- (ii) Diamond has a high melting point.
- (iii) Graphite is a good conductor of electricity.
- (iv) Acetylene burns with a sooty flame.
- (v) Kerosene does not decolourise bromine water while cooking oils do.

### **SECTION – B**

22. Why are germinating seeds taken in the experiment? What would happen if germinating seeds are replaced by boiled seeds?
23. What is an oxidising agent? What happens when an oxidising agent is added to propanol? Explain with the help of a chemical equation.

24. A child has drawn the electric circuit to study Ohm's law as shown in below Figure. His teacher told that the circuit diagram needs correction. Study the circuit diagram and redraw it after making all corrections.

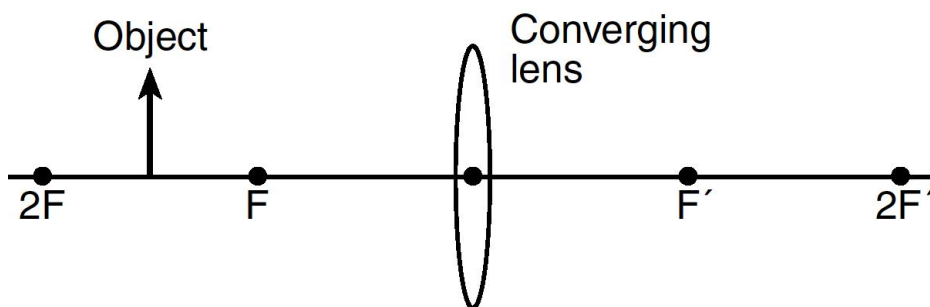


OR

What is likely to happen and how it would effect that value of resistance if we pass the current for a longer time?

25. Mention the observations of the process of binary fission in amoeba.

26. (a) Complete the ray diagram for image formation by a convex lens.  
 (b) Mention the size and nature of image formed in above case.



27. In the experimental set up shown below the gas 'x' evolved is passed through lime water.

- (i) Name the gas 'x' evolved.  
 (ii) What change do you observe in the lime water ? Write the chemical equation.

