

**KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION**  
**SAMPLE PAPER 03 FOR HALF YEARLY EXAM (2017-18)**

SUBJECT: SCIENCE (086)

**BLUE PRINT FOR HALF YEARLY EXAM: CLASS X**

Chapter	VSA (1 mark)	SA – I (2 marks)	SA – II (3 marks)	LA (5 marks)	Practical Based Questions	Total
Chemical Reactions and Equations	--	--	3(1)	5(1)	--	8(2)
Acids, Bases and Salts	--	--	3(1)	--	2(1)	5(2)
Metals and Non-metals	--	--	3(1)	5(1)	--	8(2)
Carbon and its compounds	1(1)	--	3(1)	--	2(1)	6(3)
Life Process	--	--	3(1)	5(1)	2(1)	10(3)
Control and Coordination	--	2(1)	3(1)	5(1)	--	10(3)
How do organisms reproduce?	1(1)	2(1)	3(1)	--	--	6(3)
Light - Reflection and Refraction	--	2(1)	6(2)	--	2(1)	10(4)
Electricity	--	--	3(1)	5(1)	2(1)	10(3)
Magnetic Effects of Electric Current	--	--	--	5(1)	2(1)	7(2)
<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>

**MARKING SCHEME FOR HALF YEARLY EXAM**

SECTION	MARKS	NO. OF QUESTIONS	TOTAL
VSA	1	2	02
SA – I	2	3	06
SA – II	3	10	30
LA	5	6	30
Pract Based Quest.	2	6	12
<b>GRAND TOTAL</b>			<b>80</b>

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**SUBJECT: SCIENCE**

**MAX. MARKS : 80**

**CLASS : X**

**DURATION : 3 HRS**

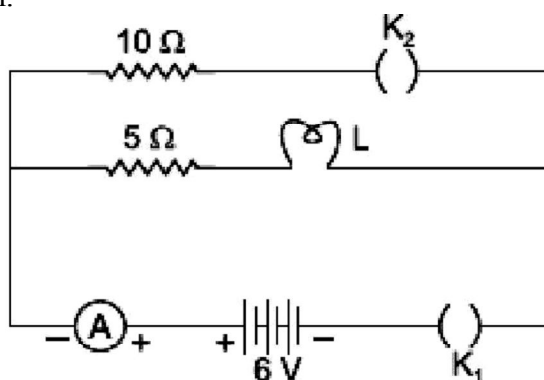
**General Instructions:**

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. Question number **1 to 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-A** are **two marks** questions. These are to be answered in about **30 words** each.
6. Question numbers **6 to 15** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.
7. Question numbers **16 to 21** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
8. Question numbers **22 to 27** in **Section-B** are questions based on practical skills and are **two marks** questions.

**SECTION – A**

1. Name the functional group present in each of the following organic compounds:  
(i)  $C_2H_5Cl$  (ii)  $C_2H_5OH$
2. Name the method by which Hydra reproduces. Is this method sexual or asexual?
3. Name and explain the function of the hormone secreted by the pituitary gland in humans.
4. Explain the terms: (i) Implantation of Zygote (ii) Placenta
5. Draw a ray diagram to show the path of the reflected ray corresponding to an incident ray of light parallel to the principal axis of a convex mirror and show the angle of incidence and the angle of reflection on it.
6. What is meant by:  
(a) Displacement reaction  
(b) Reduction reaction  
(c) Combination reaction.  
Write balanced chemical equation for each reaction:
7. (a) What is universal indicator ?  
(b) Write the chemical equation involved in the preparation of sodium hydroxide. Name the process.
8. What is meant by reactivity series of metals? State which of the following chemical reactions will take place giving suitable reason for each.  
(a)  $Zn(s) + CuSO_4(aq) \rightarrow ZnSO_4(aq) + Cu(s)$   
(b)  $Fe(s) + ZnSO_4(aq) \rightarrow FeSO_4(aq) + Zn(s)$   
(c)  $Zn(s) + FeSO_4(aq) \rightarrow ZnSO_4(aq) + Fe(s)$
9. What are homologous series of carbon compounds? Write the molecular formula of two consecutive members of homologous series of aldehydes. State which part of these compounds determines their (i) physical and (ii) chemical properties.

10. Describe in brief the function of kidneys, ureters, urinary bladder and urethra.
11. Which part of the brain controls involuntary actions? Write the function of any two regions of it.
12. What is meant by pollination? Name and differentiate between the two modes of pollination in flowering plants.
13. State the laws of refraction of light. If the speed of light in vacuum is  $3 \times 10^8$  m/s, find the absolute refractive index of a medium in which light travels with a speed of  $1.4 \times 10^8$  m/s.
14. An object placed on a metre scale at 8 cm mark was focussed on a white screen placed at 92 cm mark, using a converging lens placed on the scale at 50 cm mark.
  - (i) Find the focal length of converging lens.
  - (ii) Find the position of the image formed if the object is shifted towards the lens at a position of 29.0 cm.
  - (iii) State the nature of the image formed if the object is further shifted towards the lens.
15. Study the circuit shown:



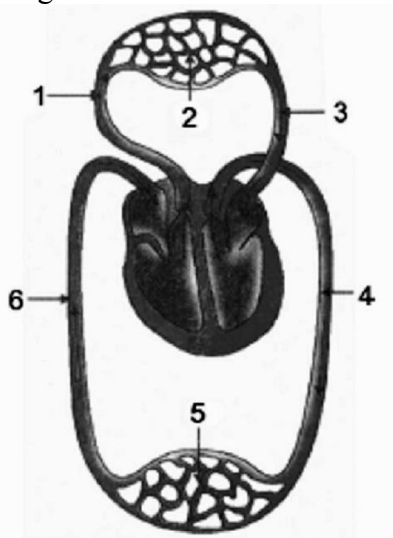
A current of 0.6 A is shown by ammeter in the circuit when the key K1 is closed. Find the resistance of the lamp L. What change in current flowing through the 5 Ω resistor and potential difference across the lamp will take place, if the key K2 is also closed. Give reason for your answer.

16. A metal nitrate 'A' on heating gives yellowish brown coloured metal oxide along with brown gas 'B' and a colourless gas 'C'. Aqueous solution of 'A' on reaction with potassium iodide forms a yellow precipitate of compound 'D'. Identify 'A, B, C, D'. Also identify the types of both the reactions. Metal present in 'A' is used in alloy which is used for soldering purposes.
17. (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.
18. (a) Draw a diagram to show the nutrition in Amoeba and label the parts used for this purpose. Mention any other purpose served by this part other than nutrition.  
(b) Name the glands associated with digestion of starch in human digestive tract and mention their role.  
(c) How is required pH maintained in the stomach and small intestine?
19. Suggest six reflex actions of the body. Explain how the reflex arc is the same in all of them.
20. Draw the pattern of magnetic field lines through and around a current carrying loop of wire. Mark the direction of (i) electric current in the loop (ii) magnetic field lines. How would the strength of magnetic field due to current, carrying loop be affected if-  
(a) radius of the loop is reduced to half its original value?  
(b) strength of current through the loop is doubled?

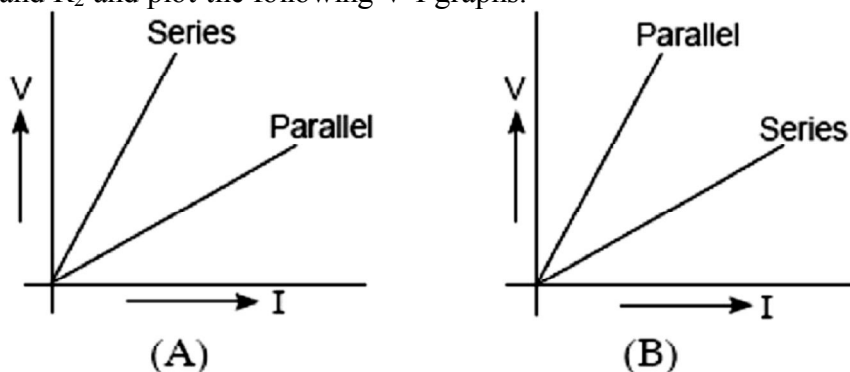
21. What is meant by electrical resistivity of a material? Derive its S.I. unit. Describe an experiment to study the factor on which the resistance of a conducting wire depends.

**SECTION – B**

22. What happens when chlorine is passed over slaked lime at 313K ? Write chemical equation of the reaction involved and state two uses of the product obtained.
23. Atom of an element contains five electrons in its valence shell. This element is major component of air. It exists as a diatomic molecule.  
 (i) Identify the element.  
 (ii) Show the bond formed between two atoms of this element.  
 (iii) Write the nature of the bond between the two atoms.
24. Label any 4 parts in the given diagram.



25. Two students perform the experiments on series and parallel combinations of two given resistors  $R_1$  and  $R_2$  and plot the following V-I graphs.



Which of the two diagrams correctly represents the labels 'series and parallel' on the plotted curves? Justify your answer.

26. A compass needle is placed near a current-carrying wire. State your observation for the following cases, and give reason for the same in each case –  
 (a) Magnitude of electric current in the wire is increased.  
 (b) The compass needle is displaced away from the wire.
27. A child reads words of a book with the help of a convex lens keeping it close to book. He find words enlarged and erect when he gradually withdraws the lens away from the book. At one position, the words again become distinctly visible but this time, these are enlarged and inverted. Explain this difference with the help of ray diagram for both cases.