

KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION
SAMPLE PAPER 02 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	1(1)	--	3(1)	--	2(1)	6(3)
Carbon and its compounds	--	--	3(1)	5(1)	--	8(2)
Life Process	--	2(1)	3(1)	5(1)	--	10(3)
Control and Coordination	--	--	3(1)	5(1)	2(1)	10(3)
How do organisms reproduce?	1(1)	2(1)	3(1)	--	--	6(3)
Light - Reflection and Refraction	--	2(1)	3(1)	--	2(1)	7(3)
Electricity	--	--	3(1)	5(1)	2(1)	10(3)
Magnetic Effects of Electric Current	--	--	3(1)	5(1)	2(1)	10(3)
Total	2(2)	6(3)	30(10)	30(6)	12(6)	80(27)

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
GRAND TOTAL			80

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SUBJECT: SCIENCE

CLASS : X

MAX. MARKS : 80

DURATION : 3 HRS

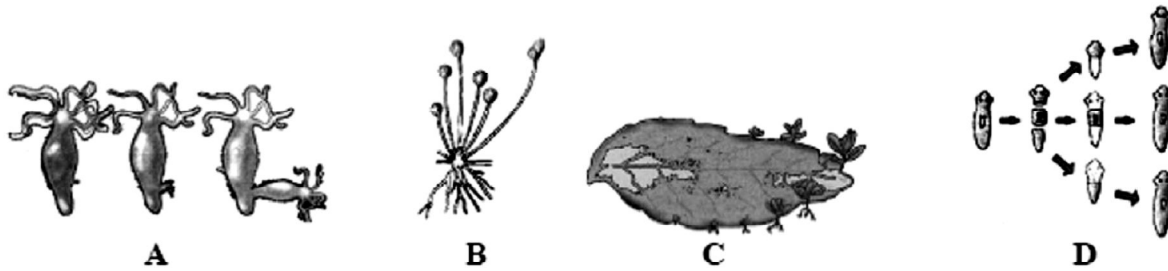
General Instructions:

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. Why does calcium float in water ?
2. Name the life process of an organism that helps in the growth of its population.
3. What is the role of HCl in protein digestion?
4. Define multiple fission. Give its one example.
5. “Vehicles in this mirror are closer than they appear”. Why is this warning printed on the side view mirror of most vehicles?
6. 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
7.
 - (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?
8. State reasons for the following:
 - (a) Electric wires are covered with rubber like material.
 - (b) From dilute hydrochloric acid, zinc can liberate hydrogen gas but copper cannot.
 - (c) Sulphide ore of a metal is first converted to its oxide to extract the metal from it.
9. What are isomers? Why can't we have isomers of first three members of alkane series? Draw the possible structures of isomers of butane, C₄H₁₀.
10. Explain the process by which inhalation occurs during breathing in human beings.
11.
 - (a) Draw the structure of neuron and label cell body and axon.
 - (b) Name the part of neuron:
 - (i) where information is acquired
 - (ii) through which information travels as an electrical impulse.

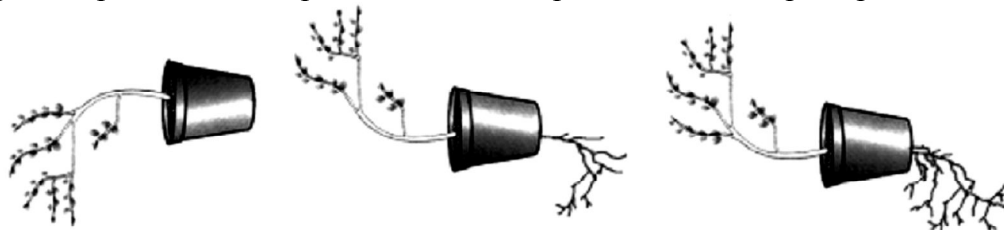
12.



1. Identify the organisms in figure A, B, C and D.
 2. Identify the life process shown in all the figures.
 3. How is this life process advantageous to the organisms?
13. A student wants to project the image of a candle flame on a screen 80 cm in front of a mirror by keeping the candle flame at a distance of 20 cm from its pole.
- (i) Which type of mirror should the student use?
 - (ii) Find the magnification of the image produced.
 - (iii) Find the distance between the object and its image.
 - (iv) Draw a ray diagram to show the image formation in this case and mark the distance between the object and its image.
14. Define 1 volt. Express it in terms of SI unit of work and charge. Calculate the amount of energy consumed in carrying a charge of 1 coulomb through a battery of 3 V.
15. What is overloading? State the causes of overloading.
16. (a) Define a balanced chemical equation. Why should an equation be balanced?
(b) Write the balanced chemical equation for the following reaction:
(i) phosphorus burns in presence of chlorine to form phosphorus pentachloride.
(ii) burning of natural gas.
(iii) the process of respiration.
17. (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.
18. (a) Draw a sectional view of the human heart and label on it – Aorta, Right ventricle and Pulmonary veins.
(b) State the functions of the following components of transport system: (i) Blood (ii) Lymph
19. What is a reflex arc? Draw a neat labelled diagram of the components in a reflex arc. Why do impulses flow only in one direction in a reflex arc?
20. State Ohm's law. Write the necessary conditions for its validity. How is this law verified experimentally? What will be the nature of graph between potential difference and current for a conductor? Name the physical quantity that can be obtained from this graph.
21. 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?

SECTION – B

22. Classify the following salts into acidic, basic and neutral : Potassium sulphate, ammonium chloride, sodium carbonate, sodium chloride.
23. When a metal X is treated with cold water, it gives a base Y with molecular formula XOH (Molecular mass = 40) and liberates a gas Z which easily catches fire. Identify X, Y and Z.
24. The given experimental set-up establishes the response of different plant parts towards gravity.

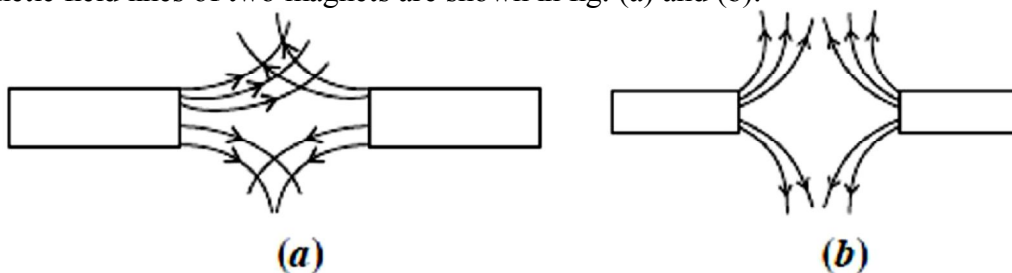


- (a) Give the scientific term used for such response/movement.
(b) How is shoot response different from root response/movement?
25. In an experiment with a rectangular glass slab, a student observed that a ray of light incident at an angle of 55° with the normal on one face of the slab, after refraction strikes the opposite face of the slab before emerging out into air making an angle of 40° with the normal. Draw a labelled diagram to show the path of this ray. What value would you assign to the angle of refraction and angle of emergence ?
26. In an experiment to study the relation between the potential difference across a resistor and the current through it, a student recorded the following observations:

Potential difference V (volts)	1.0	2.2	3.0	4.0	6.4
Current I (amperes)	0.1	0.2	0.6	0.4	0.6

On examine the above observations, the teacher asked the student to reject one set of readings as the values were out of agreement with the rest. Which one of the above sets of readings can be rejected? Calculate the mean value of resistance of the resistor based on the remaining four sets of readings.

27. Magnetic field lines of two magnets are shown in fig. (a) and (b).



Select the figure that represent the correct pattern of field lines. Give reason for your answer. Also name the poles of the magnet facing each other.