

**KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION**  
**SAMPLE PAPER 02 FOR SA - I (2016-17)**

**SUBJECT: SCIENCE**

**BLUE PRINT : SA-I CLASS IX**

<b>Unit/Topic</b>	<b>VSA/MCQ (1 mark)</b>	<b>Short answer (2 marks)</b>	<b>Short answer (3 marks)</b>	<b>Long answer (5 marks)</b>	<b>Total</b>
Matter in our Surroundings	1(1)	2(1)	-	5(1)	<b>08(3)</b>
Is matter around us pure	3(3)	4(2)	9(3)	5(1)	<b>21(9)</b>
The Functional unit of life	2(2)	4(2)	-	-	<b>06(4)</b>
Tissues	1(1)	-	6(2)	5(1)	<b>12(4)</b>
Motion	1(1)	-	6(2)	-	<b>07(3)</b>
Force and laws of motion	2(2)	-	9(3)	5(1)	<b>16(6)</b>
Gravitational	-	2(1)	-	5(1)	<b>07(2)</b>
Improvement in food resources	2(2)	-	6(2)	5(1)	<b>13(5)</b>
<b>Total</b>	12(12)	12(6)	36(12)	30(6)	<b>90(36)</b>

**MARKING SCHEME FOR SA – I**

<b>SECTION</b>	<b>MARKS</b>	<b>NO. OF QUESTIONS</b>	<b>TOTAL</b>
<b>VSA</b>	1	3	03
<b>SA – I</b>	2	3	06
<b>SA – II</b>	3	12	36
<b>LA</b>	5	6	30
<b>Practical based MCQs</b>	1	9	09
	2	3	06
<b>GRAND TOTAL</b>			<b>90</b>

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**SUBJECT: SCIENCE**

**MAX. MARKS : 90**

**CLASS : IX**

**DURATION : 3 HRS**

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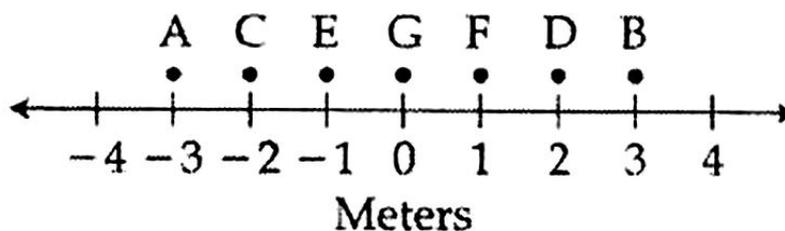
**General Instructions:**

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 numbers **1 to 3** in **Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.
  5. Question numbers **4 to 6** in **Section-A** are **two marks** questions. These are to be answered in about **30 words** each.
  6. Question numbers **7 to 18** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.
  7. Question numbers **19 to 24** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
  8. Question numbers **25 to 33** in **Section-B** are multiple choice questions based on practical skills. Each question is a **one mark** question. You are to select one most appropriate response out of the four provided to you.
  9. Question numbers **34 to 36** in **Section-B** are questions based on practical skills and are **two marks** questions.
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**SECTION – A**

1. A train starting from a railway station attains a velocity of 30 m/s in one minute. What is its acceleration?
2. Why friction doesn't roll a ball backward if no force is pushing or pulling it?
3. Name two unicellular organisms
4. A stone and the earth attract each other with an equal and opposite force. Why then we see only the stone falling towards the earth but not the earth rising towards the stone?
5. How does an *Amoeba* obtain its food?
6. Show by a diagram the interconversion of the three states of matter.
7. On what factors do the following physical quantities depend?
  - (a) Inertia
  - (b) Momentum
  - (c) Force
8. Aditya was a small farmer. As his field was rain fed, he could not take the risk of growing specialized crops. He used mix the seeds of two crops and sow in the field. Ajay, his son who had passed Class IX suggested to grow two or more crops simultaneously in a definite pattern. Aditya followed and the productivity per unit area increased.
  - (a) Name the cropping pattern which Aditya used earlier and the one suggested by Ajay.
  - (b) Write two advantages of practicing the pattern suggested by Ajay.
  - (c) Write two values depicted by Ajay.
9. The Italian bee is better than local varieties for commercial honey production. Why? State the meaning of pasturage.

10. How many litres of 15% (mass/volume) sugar solution would it take to get 75g of sugar?
11. Differentiate between homogeneous and heterogeneous mixtures. Classify the following mixtures as homogeneous and heterogeneous: Air, Alloy, Blood, Butter
12. (a) What would you observe when:  
 (i) a mixture of iron filings and sulphur powder is heated strongly.  
 (ii) A saturated solution of sodium chloride prepared at 60°C is allowed to cool at room temperature.  
 (b) You are provided with a fine white coloured powder which is either sugar or salt. How will you identify it without tasting it?
13. Draw a neat and labelled diagram of the neuron cell.
14. Name the constituents of phloem? Which of these are non living cells? What role does phloem play in plants?
15. Two objects of masses 100 g and 200 g are moving along the same line and direction with velocities of  $2 \text{ m s}^{-1}$  and  $1 \text{ m s}^{-1}$ , respectively. They collide and after the collision, the first object moves at a velocity of  $1.67 \text{ m s}^{-1}$ . Determine the velocity of the second object.
16. State Newton's law of motion. A bullet of mass 50g is fired from rifle of mass 4 kg with an initial velocity of 35 m/s. what is the recoil velocity of the rifle?
17. Rahul while doing skating moves along a number line in the alphabetical order (A, B, C, D, .... G) and finally stops at 'G'.

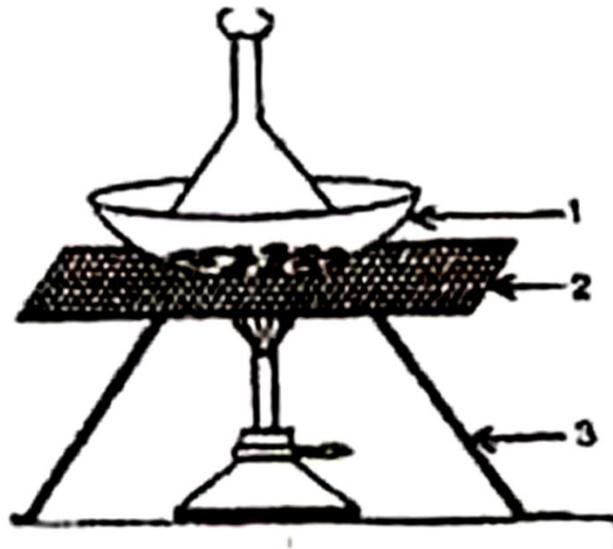


- (a) Calculate the distance travelled by him.  
 (b) Find his average velocity if he covers each meter in 1 s.
18. A motorboat starting from rest on a lake accelerates in a straight line at a constant rate of  $3.0 \text{ m/s}^2$  for 8.0 s. How far does the boat travel during this time?
19. What is crystallization? Where is it used? Why is this better than simple evaporation technique?
20. State any three characteristics of the particles of matter?  
 Which of the following are matter?  
 table, oxygen, affection, milk, cold, thirst, salt.
21. Draw the labelled diagram of a section of phloem. Name the four types of elements found in phloem. With respect to conduction, what is the main difference between xylem and phloem?
22. (a) Define force. State four effects a force can produce in a body.  
 (b) A man pushes a box of mass 50 kg with a force of 80 N. What will be the acceleration of the box? What would be the acceleration if the mass were halved?

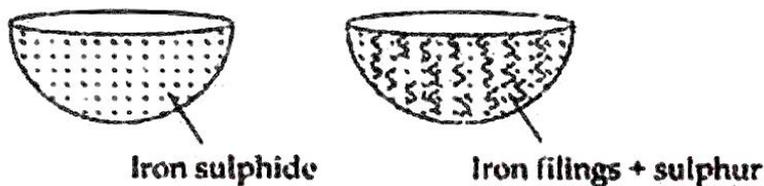
23. (a) A person weighs 110.84 N on moon, whose acceleration due to gravity is  $\frac{1}{6}$  of that earth. If the value of 'g' on earth is  $9.8 \text{ m/s}^2$ . Calculate (i) 'g' on moon (ii) mass of person on moon (iii) weight of person on earth.  
 (b) How does the value of g on the earth is related to the mass of the earth and its radius? Derive it?
24. (a) Differentiate between macronutrient and micronutrients on the basis of (i) their functions (ii) amount required by plants.  
 (b) Classify the following elements as macronutrient or micronutrients in plants  
 (i) Nitrogen (ii) Zinc (iii) Copper (iv) Potassium  
 (c) In what way deficiency of these nutrients harmful to crops?

### SECTION – B

25. While preparing temporary slide, the correct method of placing the cover slip on the specimen is:  
 (a) dropping the cover slip gently with hand  
 (b) sliding the cover slip gently from the side  
 (c) placing the cover slip gently using forceps  
 (d) placing the cover slip gently using a needle
26. You are shown two plant slides of parenchyma and sclerenchyma. You can identify the sclerenchyma by the  
 (a) thickness of cell wall  
 (b) location of nucleus  
 (c) position of vacuoles  
 (d) size of cells
27. In the following diagram the respective correct labeling of 1, 2 and 3 is:

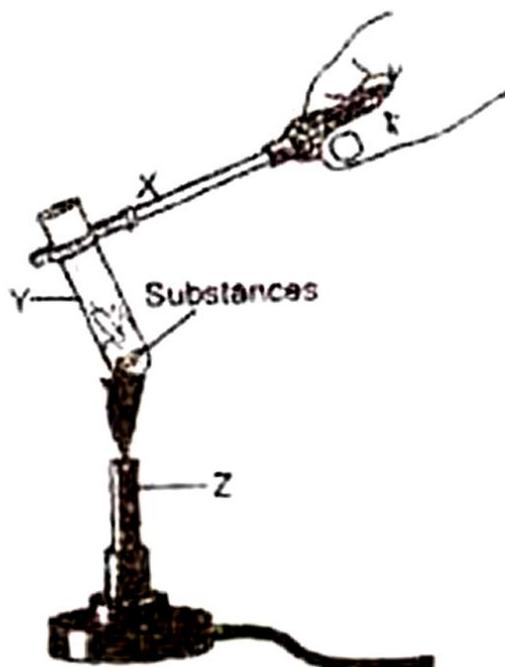


- (a) China dish, wire gauze, tripod stand  
 (b) China dish, tripod stand, wire gauze  
 (c) wire gauze, China dish, tripod stand  
 (d) tripod stand, wire gauze, China dish
28. Iron sulphide and a mixture of iron fillings and sulphur powder were taken in different china dishes. Which of the following observations is correct?



- (a) Both are heterogeneous
- (b) Both are homogeneous
- (c) Iron sulphide is homogeneous but the mixture of iron filings and sulphur is heterogeneous
- (d) Iron sulphide is heterogeneous but the mixture of iron filings and sulphur is homogeneous

29. In the following setup of heating apparatus identify X, Y and Z.



- | X                    | Y                | Z                |
|----------------------|------------------|------------------|
| (a) Test tube        | burner           | Test tube holder |
| (b) Test tube holder | burner           | Test tube        |
| (c) Test tube holder | Test tube        | burner           |
| (d) Test tube        | Test tube holder | burner           |

30. A substance 'X' was added to the test tube containing a mixture of arhar dal and water, to test the presence of metanil yellow. The colour of the solution changed to magenta. 'X' is

- (a) conc. Sulphuric acid
- (b) conc. hydrochloric acid
- (c) conc. nitric acid
- (d) conc. sodium hydroxide

31. On strongly heating grey coloured iron filling with yellow coloured sulphur powder, the colour of iron sulphide compound formed is:

- (a) grey
- (b) yellow
- (c) yellowish grey
- (d) black

32. The spring balance works on the principle of:

- (a) Newton's first law of motion
- (b) Newton's second law of motion
- (c) Newton's third law of motion
- (d) All the above

- 33.** Given below are the steps that need to be taken to test presence of metanil yellow in dal. But these are not written in correct order:
- (i) Take a small amount of sample of dal in a test-tube
  - (ii) Add few drops of conc. HCl into the test-tube
  - (iii) Add 10 ml of water in the test-tube
  - (iv) Stir the sample in water by shaking it well

The correct order will be:

- (a) (i), (iv), (ii), (iii)
  - (b) (i), (iii), (iv), (ii)
  - (c) (i), (ii), (iii), (iv)
  - (d) (i), (iv), (iii), (ii)
- 34.** A student recorded the mass of dry raisins as 3g and the mass of raisins after soaking in water as 4.8g. Calculate the percentage of water absorbed by raisins. Write one precaution of this experiment.
- 35.** Aditi took fine chalk powder, egg albumin, starch powder and lum powder in four test tubes A, B, C and D respectively. After adding water to all four test tubes, identify the test tubes as true solution, suspension and colloid.
- 36.** What precautions are to be taken while doing the experiment for the determination of melting point of ice?
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