KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION
SAMPLE PAPER 01 FOR SA – I (2016–17)

SUBJECT: SCIENCE

BLUE PRINT : SA–I CLASS IX

Unit/Topic	VSA/MCQ (1 mark)	Short answer (2 marks)	Short answer (3 marks)	Long answer (5 marks)	Total
Matter in our Surroundings	1(1)	4(2)	-	5(1)	**10(4)**
Is matter around us pure	3(3)	2(1)	9(3)	5(1)	**19(8)**
The Functional unit of life	2(2)	2(1)	3(1)	-	**07(4)**
Tissues	1(1)	2(1)	3(1)	5(1)	**11(4)**
Motion	-	2(1)	9(3)	5(1)	**16(5)**
Force and laws of motion	2(2)	-	3(1)	5(1)	**10(4)**
Gravitational	1(1)	-	3(1)	-	**04(2)**
Improvement in food resources	2(2)	-	6(2)	5(1)	**13(5)**
Total	12(12)	12(6)	36(12)	30(6)	**90(36)**

MARKING SCHEME FOR SA – I

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

KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION
SAMPLE PAPER 01 FOR SA – I (2016–17)

SUBJECT: SCIENCE   MAX. MARKS : 90
CLASS : IX   DURATION : 3 HRS
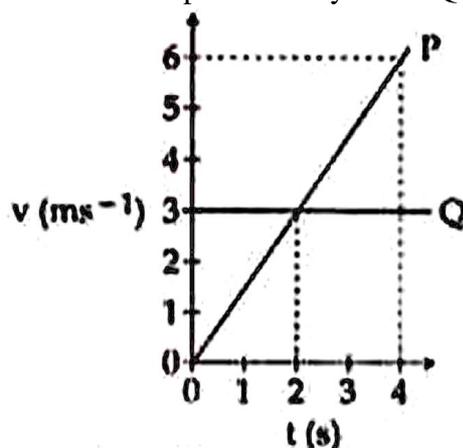
General Instructions:
1. All questions are compulsory.
2. The question paper comprises of **two Sections, A** and **B.** You are to attempt both the sections.
3. All questions of **Section-A** and **Section-B** are to be attempted separately.
4. Question numbers **1 to 3** in **Section-A** are **one 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.
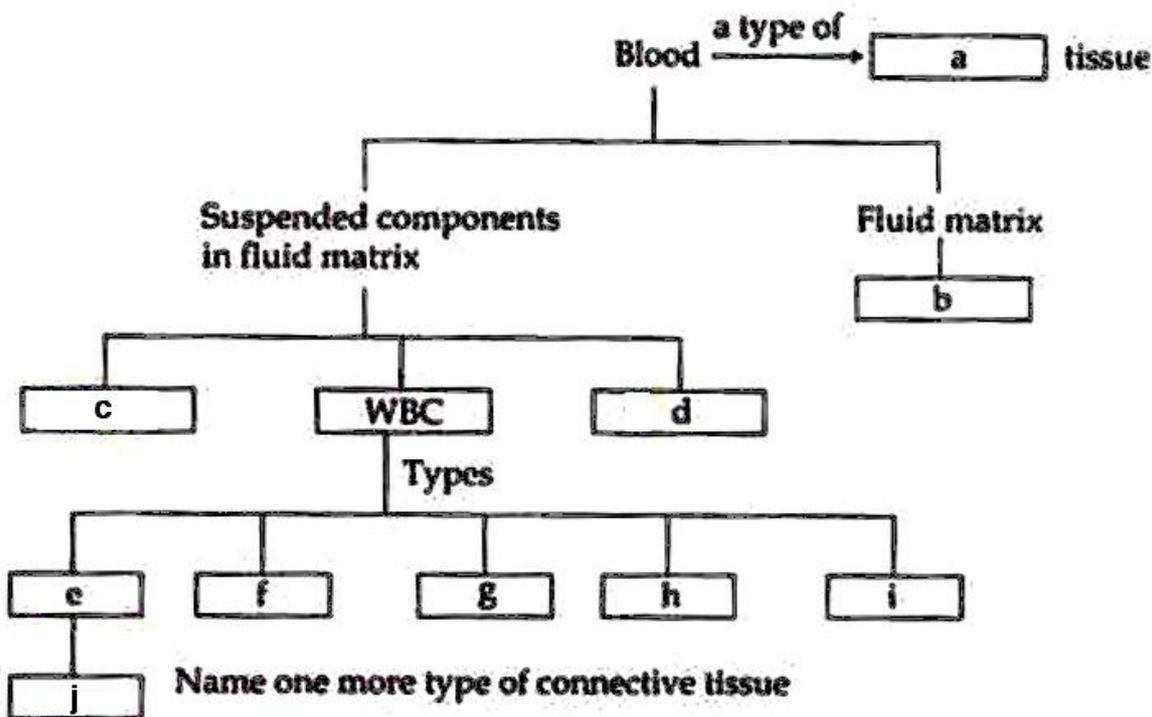
SECTION – A

1. How are action-reaction forces related in magnitude and direction?

2. Name the process by which unicellular freshwater organism and most plant cells tend to gain water.

3. Can a body have mass but no weight? Give reason for your answer.

4. How is striated squamous epithelial tissue different from squamous epithelial tissue?

5. "Evaporation is known as surface phenomenon." Justify this statement.

6. A moving train is brought to rest in 20 seconds by applying brakes. Find the velocity with which the train was initially moving, if the retardation due to brakes is $2 m/s^2$.

7. (a) How are average speed and average velocity obtained? Mention the situation in which average velocity can be zero but not the speed.
    (b) Mention the quantities measured by the following devices in a car.
    (i) Speedometer   (ii) Odometer

8. Two persons manage to push a motorcar of mass 1200 kg at a uniform velocity along a level road. The same motorcar can be pushed by three persons to produce an acceleration of $0.2 m/s^2$. With what force does each person push the motorcar? (Assume that all persons push the motorcar with the same muscular effort.)

9. A particle is thrown up vertically with a velocity of 50 m/s. What will be its velocity at the highest point of journey? How high would the particle rise? What time would it take to reach the highest point? (Take $g = 10 m/s^2$)

---

10. Your mass on earth is 50 kg. Planet 'M' has two times force of gravity of that on earth. What will be your mass and weight on planet 'M'? ($g = 9.8$ m/s^2)

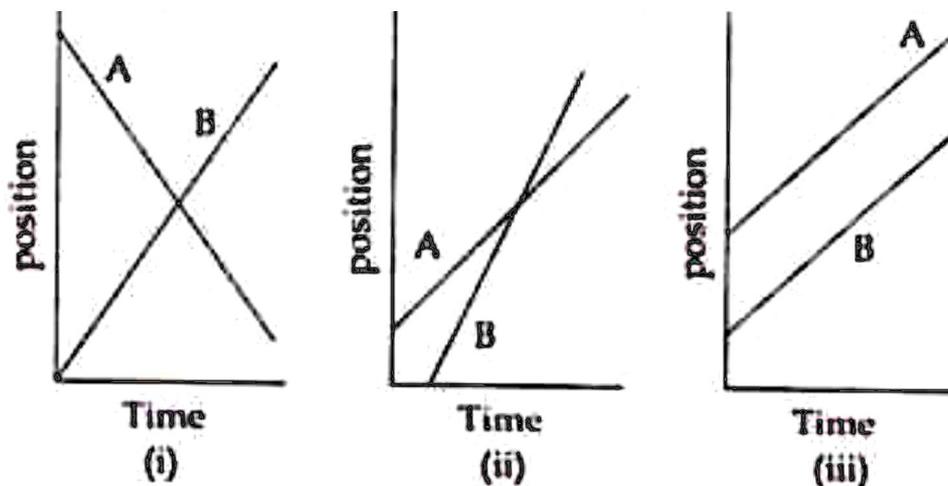**11.** The speed-time graphs of two cars are represented by P and Q as shown below:

(a) Find the difference in the distance travelled by the two cars (in m) after 4 s.
(b) Do they ever move with the same speed? If so when?
(c) What type of motion car P and car Q are undergoing?

12. Sunita told her younger sister that cereals provide us carbohydrates for energy requirement, pulses protein, oil seeds provide us necessary fats while vegetables, spices and fruits provide a range of vitamins and minerals. All of them together are required for proper growth and maintenance. She stressed that she must take a balanced diet.
(a) What is meant by balanced diet?
(b) List two plants which provide oil seeds.
(c) List any two reasons that motivated Sunita to tell these facts to her younger sister.

13. State the conditions essential for production of the best quality of honey. Name a product other than honey which is obtained through bee keeping.

14. You are provided with a mixture of Iron filings and sulphur . Answer the following questions.
(a) Which technique can be used to separate the components of mixture?
(b) Name the gas which is produced when the mixture is treated with dilute sulphuric acid at room temperature?
(c) Write two properties of gas evolved in part (b).

15. (a) Why is milk considered to be a heterogeneous mixture?
(b) A solution is made by dissolving 25 grams of sugar in 175 grams of water. Calculate the concentration of the sugar solution.

16. How does pressure help in liquefaction of gas? Name two liquefied of gases used in daily life.

17. Write four types of the epithelial tissue and give its two functions.

18. Describe the structural features of cell membrane and cell wall. Why cell membrane is called a selectively permeable membrane?

19. (a) Write any two differences between homogeneous and heterogeneous mixtures.
(b) Identify homogeneous and heterogeneous mixtures among the following:
Air, Salt solution, kerosene in water, muddy water, soil, soda water.

20. What is meant by Tyndall effect? Which type of solutions show Tyndall effect? Write two important properties of these solutions. Write any two examples of these solutions used in daily life.

21. Complete the following flow chart:

22. Using second law of motion, derive the relation between force and acceleration. A bullet of 10 g strikes a sand-bag at a speed of 103 m/s and gets embedded after travelling 5 cm. Calculate
(i) the resistive force exerted by the sand on the bullet
(ii) the time taken by the bullet to come to rest.

23. (a) Describe the different kinds of irrigation systems adopted in India to supply water to the fields.
(b) Mention the modern initiatives undertaken in this respect.

24. The position-time graphs of two objects A and B in three different situations for a particular duration are as shown below:

(a) In which situation the distance between them will remain same?
(b) In which situation they are moving in opposite directions?

(c) Is the velocity of object A positive or negative in situation (ii)?

(d) Are they crossing each other in any situations (s)? If so, why?

SECTION – B

25. Aditi took the sample of arhar dal to laboratory from her house. She wants to test for the presence of adulteration in it. She got confused in choosing reagent. Please help her to choose the same from the following:
   (a) Iodine solution
   (b) methylene Blue
   (c) Safranin
   (d) conc. hydrochloric acid

26. Aditya wanted to observe starch granules in potato under a microscope .He tool a freshly out slice of a potato and pressed it on a slide. The stain that he should use to observe starch granules clearly is:
   (a) Safranin
   (b) acetocarmine
   (c) methylene blue
   (d) iodine

27. When we mix iron filings and sulphur powder thoroughly and spread the mixture evenly on a watch glass as shown in diagram, grey and yellow coloured particles can be seen distinctly spreaded. What do you conclude from this observation?

Mixture of iron

   (a) Homogeneous mixture is formed
   (b) Heterogeneous mixture is formed
   (c) Iron sulphide compound is formed
   (d) Mixture of Iron sulphide and Iron is formed.

28. When iron filings and sulphur powder are heated strongly then name of the compound formed on heating is
   (a) Ferric sulphide
   (b) Ferrous sulphide
   (c) Mixture of iron and sulphur
   (d) Mixture of ferric oxide and sulphur

29. Students were asked to study the reaction between barium chloride and sodium sulphate. Four different methods are given below:

	Procedure	Observations
I	Mixed powder of barium chloride and sodium sulphate	The colour of mixture changes to yellow
II	Mixed solutions of barium chloride and sodium sulphate	Thick white precipitate is formed
III	Added solution of barium chloride to sodium sulphate powder	Solution becomes turbid
IV	Added solution of barium chloride to sodium sulphate sodium	No change is observed

The correct method is:

(a) I (b) II (c) III (d) IV

30. Ammonium chloride sublimates on heating. It means that on heating ammonium chloride:
    (a) First melts at its melting points and then changes in to a gas at its boiling point
    (b) directly changes from solid to vapours without melting.
    (c) loses its water of crystallization
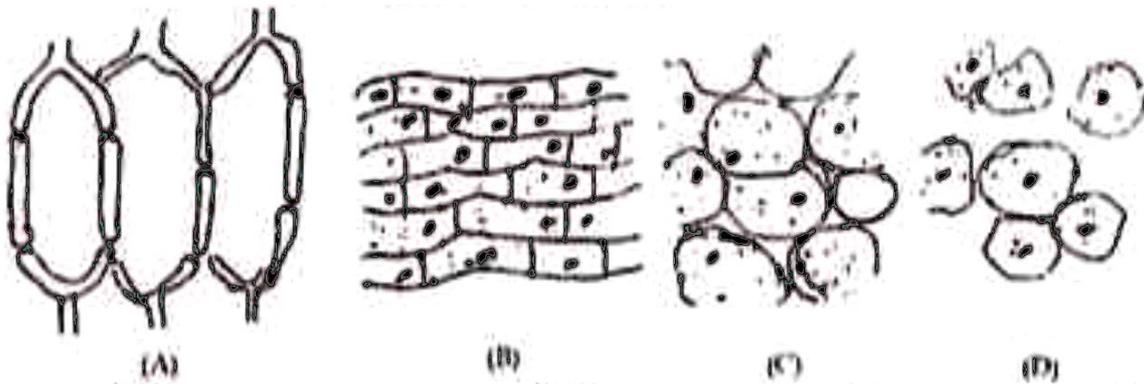   (d) condenses from the gaseous state to the liquid state

31. A body is accelerated if:
    (a) balanced force acts on it
    (b) unbalanced force acts on it
    (c) no force acts on it
    (d) frictional force acts on it

32. To prepare a temporary mount of an onion peel, the peel is taken out from:
    (a) the outer part of onion leaf
    (b) the inner part of onion leaf
    (c) the dry cover of onion
    (d) fine slice of slicing, the leaf of onion

33. Four slides were observed under microscope for spot test as shown below. The correct identification of the four slides is:

	(A)	(B)	(C)	(D)
(a)	Onion peel	Cheekcell	sclerenchyma	parenchyma
(b)	Cheekcell	parenchyma	sclerenchyma	Onion peel
(c)	parenchyma	Cheekcell	Onion peel	sclerenchyma
(d)	sclerenchyma	Onion peel	parenchyma	Cheekcell

34. Mention the temperature of the following in degree Celsius and Kelvin Scale:
    (a) Ice and ice cold water
    (b) Boiling water and stream.

35. Write four main steps of the method involved in an experiment on determining the percentage of water absorbed by raisins in the laboratory.

36. A mixture of sand, chalk powder and common salt is dissolved in water and then filtered. Name the substance left on filter paper. Name the substance in the filtrate.