

**Goa Board**  
**Class IX Science**  
**Term 1**  
**Sample Paper - 5**

**Time: 3 hrs**

**Total Marks: 90**

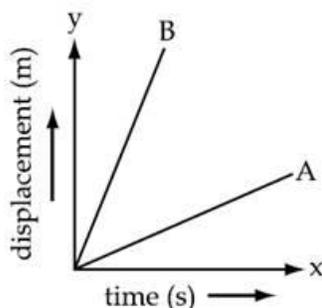
**General Instructions:**

1. The question paper comprises two Sections, A and B. You are to attempt both the sections.
2. All questions are compulsory.
3. All questions of **Section A** and all questions of **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**

**Q. 1** Why is dry ice stored under high pressure? (1)

**Q. 2** Two cars A and B have their displacement time graphs as given below. Which car has a greater velocity? (1)



**Q. 3** What is the advantage of the highly folded inner membrane of mitochondria? (1)

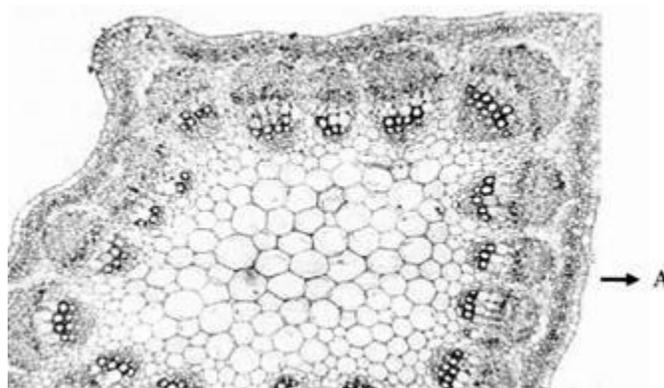
- Q. 4** The gravitational force between two objects is  $F$ . How will this force change when
- The distance between them is reduced to half?
  - The mass of one of the objects becomes four times? (2)
- Q. 5** How will you separate a mixture of mercury, oil and water? (2)
- Q. 6** Name the two species of cattle reared in India. (2)
- Q. 7** With the help of a diagram explain in brief an activity to show that particles of matter are small. (3)
- Q. 8** Explain the following properties of matter: (3)
- Fluidity
  - Density
    - What type of clothes should we wear in summer?
    - Why is the rate of diffusion faster in gases?
- Q. 9** Elements are classified as metals, non-metals and metalloids. Give any one property of each. Also give one example of each. (3)
- Q. 10** When do we use the process of centrifugation? State the principle involved in this process? List its any two applications in our daily life. (3)
- Q. 11** State the differences between manures and fertilisers. (3)
- Q. 12** A ball thrown vertically upwards returns to the thrower after 6 s. Find (3)
- The velocity with which it was thrown up.
  - The maximum height it reaches.
  - Its position after 4 s.
- Q. 13** A girl of mass 40 kg jumps with a horizontal velocity of  $5 \text{ ms}^{-1}$  onto a stationary cart with frictionless wheels. The mass of the cart is 3 kg. What is her velocity as the cart starts moving? (3)
- Q. 14** Ram started jumping down from a slow moving bus. His friend Shyam asked him not to do so as this act would injure him. Ram was not ready to listen to his friend Shyam. Then Shyam asked Ram to run in the direction of the moving bus as soon as his foot touches the road. Ram did so and landed safely. (3)
- Why did Shyam ask Ram to run in the direction of the moving bus as soon as his foot touches the road?
  - What value is shown by Shyam?

- Q. 15** State the source of centripetal force which a planet requires to revolve around the Sun. On what factors does that force depend? Suppose this force suddenly becomes zero, then in which direction will the planet begin to move if no other celestial body affects it? (3)
- Q. 16** Write your observation for the following with appropriate reason. (3)
- (a) Salt is applied to raw mango pieces.
  - (b) Dried raisins are kept in water for few hours.
- Q. 17** State the functions of (3)
- (a) Parenchyma
  - (b) Collenchyma
  - (c) Sclerenchyma
- Q. 18** What is composite fish culture? Write the conditions necessary for this technique. What are the limitations of composite fish culture? (3)
- Q. 19** (5)
- (a) What is fractional distillation? List the two conditions essential for using this as a method of separation of components of a mixture.
  - (b) Draw a labelled diagram of the apparatus used for fractional distillation.
  - (c) Which method is used to separate a mixture of two immiscible liquids? What is the principle behind this separation technique?
- Q. 20** (5)
- (a) Name a non-metallic element found in (i) liquid and (ii) gaseous states.
  - (b) Pick the metalloid from the following: Carbon, silicon, phosphorus and gold.
  - (c) Which two properties of metals enable us to give metals the desired shape?
  - (d) Name a metal which is liquid at temperature.
- Q. 21** An object starts linear motion with a velocity 'u', and under uniform acceleration 'a', it acquires a velocity 'v' in time 't'. Draw its velocity time graph. From this graph, obtain the equation  $v = u + at$ . (5)
- Q. 22** (5)
- (a) State Newton's second law of motion. How can this law be used to measure force acting on an object? Apply this law to obtain the unit of force and define it.
  - (b) State the Law of Conservation of Momentum. Apply this law to explain the recoil of a gun when a shell is fired from it.

**Q. 23**

(5)

- Write the location and function of collenchyma tissue.
- Draw a diagram of collenchyma tissue and label any four parts.
- Observe the figure given below.



Identify the region of the stem marked 'A' and the type of simple permanent tissue found in this region.

- Mention any two characteristic features of the cells found in this tissue.

**Q. 24**

(5)

- A poultry farmer wants to increase his broiler production. Explain three management practices he must follow to enhance the yield.
- In what way is the daily food requirement of broilers different from that of layers?
- What is pasturage and how is it related to honey production?

## SECTION B

**Q. 25** A well stirred and filtered solution of egg albumin in water forms

(1)

- True solution
- Suspension
- Colloidal solution
- Emulsion

**Q. 26** Sodium sulphate and barium chloride solutions are mixed in a test tube. A white precipitate is formed. What type of change is this?

(1)

- Physical change
- Physical and chemical change
- Chemical change
- None of the above

- Q. 27** Mohan used a thermometer having 20 divisions between the 30°C mark and the 40°C mark. While determining the boiling point of water using this thermometer, he observed that the level of mercury becomes constant just 3 divisions below the 100°C mark. Mohan should record in his note book (1)
- A. Least count = 0.5°C, BP = 97°C
  - B. Least count = 0.5°C, BP = 98.5°C
  - C. Least count = 1°C, BP = 98.5°C
  - D. Least count = 1°C, BP = 97°C
- Q. 28** One of the two spring balances has its pointer at the 1<sup>st</sup> division, before being put to use in the experiment to verify Newton's third law. If each division of the spring balance implies a weight of 10 gwt, what is the correction which needs to be applied to the reading of the erroneous spring balance? (1)
- A. 10 gwt
  - B. 20 gwt
  - C. 0 gwt
  - D. 1 gwt
- Q. 29** The thread used in the spring balances experiment is extensible. The probable error which can result due to this property of the thread is (1)
- A. The readings of the two spring balances will be different.
  - B. One of the spring balances could read zero.
  - C. The force experienced by each of the spring balances could be different from what is externally applied.
  - D. There will be no change.
- Q. 30** A permanent slide shows thin-walled isodiametric cells with a large vacuole. The slide contains (1)
- A. Parenchyma cells
  - B. Nerve cells
  - C. Sclerenchyma cells
  - D. Collenchyma cells
- Q. 31** Name the stain used to observe human cheek cells. (1)
- A. Safranin
  - B. Iodine
  - C. Methylene blue
  - D. Metanil yellow

**Q. 32** Neena prepared a stained mount of cheek cells but did not observe ribosomes and mitochondria because (1)

- A. Cheek cells lack ribosomes and mitochondria.
- B. Ribosomes and mitochondria do not get stained.
- C. Ribosomes and mitochondria are small and so cannot be observed under a compound microscope.
- D. The material was not stained properly.

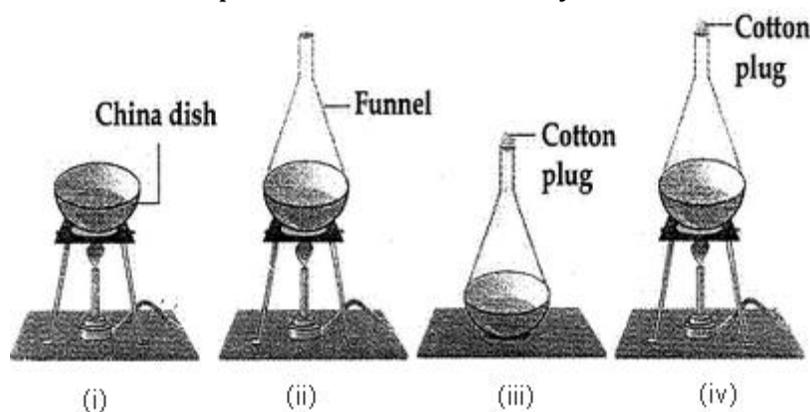
**Q. 33** Anil prepared a slide of animal tissue and noted the following observations: (1)

- (i) Long, cylindrical and unbranched cells
- (ii) Presence of dark and light bands

The tissue could be of

- A. Unstriated muscle fibres
- B. Neurons
- C. Striated muscle fibres
- D. Cardiac muscle fibres

**Q. 34** Which is the correct setup for sublimation and why? (2)



**Q. 35** 5 g of raisins were placed in distilled water for 24 hours. The mass of soaked raisins was found to be 7 g. Calculate the percentage of water absorbed by the raisins. (2)

**Q. 36** In the experiment to establish the relationship between the weight of a wooden block lying on a horizontal surface and the minimum force required to just move it using a spring balance, two students performed the experiment with the cuboid of the same dimensions and the same weight. Student A placed the cuboid on sand paper, while Student B placed it on wood mica. What is the relation between the applied forces in the spring balance for the two substances? Why? (2)