Goa Board
Class IX Science
Term 1
Sample Paper - 3

Time: 3 hrs **Total Marks: 90**

General Instructions:

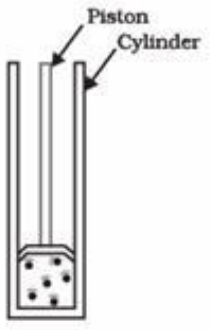
1. The question paper comprises **two sections, A and B**. You are to attempt both the sections. All questions are compulsory.
2. All the questions of **Section A** and **Section B** are to be attempted separately.
3. Question numbers **1** to **3** in **Section A** are **one mark** questions. These are to be answered in **one word** or in **one sentence.**
4. Question numbers **4** to **6** in **Section A** are **two marks** questions to be answered in about **30 words each**.
5. Question numbers **7** to **18** in **Section A** are **three marks** questions to be answered in about **50 words**.
6. Question numbers **19** to **24** in **Section A** are **five marks** questions to be answered in about **70 words**.
7. 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.
8. Question numbers **34** to **36** in **Section B** are questions based on practical skills and are **two marks** questions.

SECTION A

Q. 1 Name the different types of meristematic tissues present in plants. (1)

Q. 2 The Earth is acted upon by the gravitational force of attraction due to the Sun. Then why does the Earth not fall towards the Sun? (1)

Q. 3 What will happen to a gas when it is compressed in a cylinder with the help of a piston? (1)



Q. 4 Show that if the Earth attracts two bodies A and B placed at the same distance from the centre of the Earth with the same force, then their masses are equal. (2)

Q. 5 Mention three important applications of chromatography. (2)

Q. 6 Farmers use bee-keeping as an additional income generator. Give two reasons. (2)

Q. 7 What harm can be caused to crops if irrigated excessively? (3)

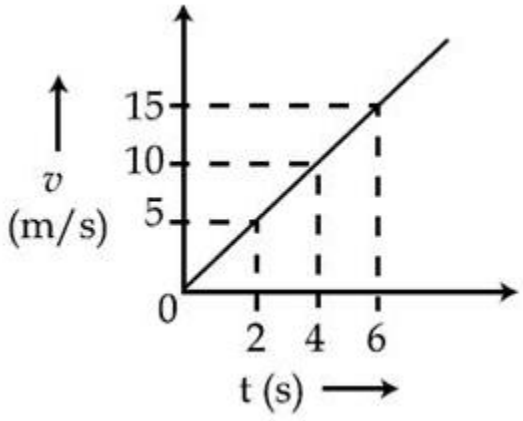
Q. 8 Answer the following questions: (3)
(a) Why is dry ice more effective for cooling purposes than ordinary ice?
(b) Name the two gases which are supplied in compressed form in homes and hospitals.
(c) How is a gas cooled during its liquefaction?

Q. 9 How does the following affect the rate of vaporisation of a liquid? (3)
(a) Surface area
(b) Temperature
(c) Humidity

Q. 10 Classify the following into (a) solid sol (b) aerosol (c) emulsion. (3)
Mist, Coloured glass, Hair cream, Gem stones, Fog, Milk

Q. 11 What is fractional distillation? List the two conditions essential for using this as a method of separation of components of a mixture. (3)

Q. 12 The motion of a body of mass 5 kg is shown in the v–t graph. From the graph, find (3)
(a) Acceleration
(b) Force acting on the body
(c) Change in momentum in 2 seconds after start



Q. 13 A machine gun can fire 50 g bullets with a velocity of 150 m/s. A 60-kg stone is moving towards the machine gun with a velocity of 10 m/s. How many bullets must be fired from the gun to just stop the stone in its tracks? (3)

Q. 14 (3)

(a) Mention any two effects of force.

(b) A body of mass 60 kg has a momentum of 300 kg m/s. Calculate its velocity.

Q. 15 (3)

(a) The weight of a man on the surface of the Earth is 392 N. Find his mass [g = 9.8 m/s^2].

(b) If the man is taken to the Moon, then what would be

(i) His mass

(ii) His weight

(iii) The acceleration due to gravity on the Moon

Q. 16 What is crop rotation and what are its advantages? (3)

Q. 17 (3)

(a) Which type of tissue is blood?

(b) Name two substances transported by blood.

(c) What values are shown by those who donate blood?

Q. 18 (3)

(a) What is osmosis?

(b) What happens to a cell when it is placed in hypotonic and hypertonic solutions? State two points of difference between osmosis and diffusion.

(c) What is plasmolysis?

Q. 19 (5)

100 ml of water at room temperature of 25˚C is taken in a beaker and a little of solid S is dissolved in it by stirring to obtain a solution X. More of solid S is added to the solution with constant stirring, while keeping the temperature of the solution constant at 30°C. After some time, it is observed that no more solid dissolves in water, and at the same time, some solid is also left undissolved at the bottom of the beaker. The contents of the beaker are filtered through a filter paper to obtain solution Y in the form of a filtrate.

(a) What name is given to solutions like X?

(b) What name is given to solutions like Y?

(c) What will you observe if the solution Y at 30°C is cooled down to 10°C by keeping the beaker in crushed ice? Why?

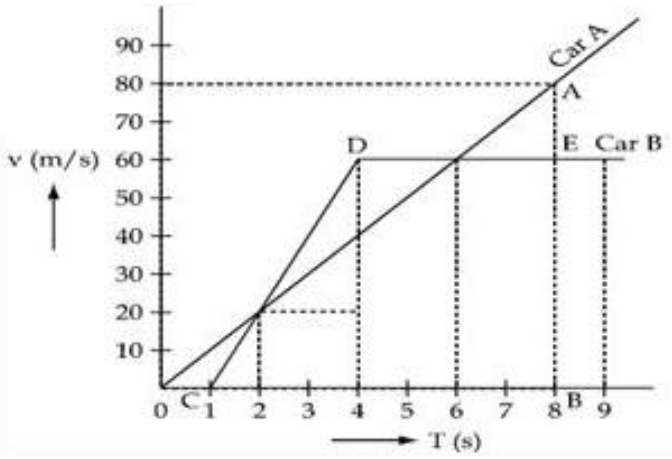
(d) What term is used to denote the solid dissolved in 100 grams of water in a solution like Y?

Q. 20 (5)

(a) What happens when a liquid is left exposed to air?

(b) List the factors which affect the rate of evaporation and explain their effect on it.

Q. 21 (5)



The V–T graph of cars A and B which start from the same place and move along a straight road in the same direction is shown above. Calculate (i) the acceleration of car A between 0 and 8 s, (ii) the acceleration of car B between 2 s and 4 s, (iii) the points of time at which both the cars have the same velocity and (iv) which of the two cars is ahead after 8 s and by how much?

Q. 22 (5)

(a) State Newton's third law of motion. Give two examples to illustrate it.

(b) Explain why a cricketer moves his hands backwards while catching a fast-moving cricket ball.

Q. 23 Explain briefly any five factors for which variety improvement is done in crops. (5)

Q. 24 (5)

(a) What is endoplasmic reticulum?

(b) Describe its structure.

(c) Name the two types of endoplasmic reticulum.

(d) What crucial role does it play in the liver cells of vertebrates?

(e) What is membrane biogenesis?

SECTION B

Q. 25 While observing a human cheek cell, a student could not observe (1)

A. Nucleus
B. Mitochondria
C. Nucleolus
D. Chloroplast

Q. 26 Nissl granules are present in (1)

A. Plant cell
B. Bacterial cell
C. Muscle cell
D. Nerve cell

Q. 27 A student was asked to identify which process occurs when raisins are soaked in water: (1)

A. Osmosis
B. Plasmolysis
C. Endocytosis
D. Diffusion

Q. 28 Neeta observed that a precipitate is formed when she added (1)

A. Barium chloride to sodium sulphate
B. Barium chloride to sodium chloride
C. Sodium sulphate to sodium chloride
D. Hydrochloric acid to barium chloride

Q. 29 The permanent plant tissue which is living and thin walled is known as (1)

A. Parenchyma
B. Collenchyma
C. Sclerenchyma
D. Xylem

Q. 30 Which is the important criterion for separating the mixture of two miscible liquids? (1)

A. Liquids should not get decomposed during the process of distillation.
B. Liquids should have different colour.
C. Difference in the molar mass of two miscible liquids should be 10 g/mol.
D. Liquids should have a large difference in their boiling points.

Q. 31 If the actual mass of a body is 500 g and the spring balance reads 450 g, what could be the reason for the variation? (1)

A. Zero error
B. Change in value of g at that place
C. Both of the above reasons are possible
D. None of the above

Q. 32 Same readings being shown in both the spring balances in a spring balance experiment provide the proof of (1)

A. Newton's first law
B. Newton's second law
C. Newton's third law
D. Newton's law of gravitation

Q. 33 In a laboratory, a spring balance is used to measure (1)

A. Only the mass of the body
B. Only the weight of the body
C. The weight of the spring and the body
D. The mass of the spring and the body

Q. 34 (i) What will happen to the coefficient of friction μ if the mass of the block is increased?
(ii) Does μ increase or decrease if one applies oil in between two surfaces? (2)

Q. 35 Which technique is used to separate blood cells from plasma? Explain the principle involved in the process. (2)

Q. 36 Rita was given an onion peel slide. What possible characteristics could she have observed under the microscope? (2)