

CBSE Board
Class IX Science
Term 1
Sample Paper - 1

Time: 3 hrs

Total Marks: 90

General Instructions:

1. The question paper comprises of **two sections, A and B**. You are to attempt both the sections.
2. There is no overall choice. However, internal choice has been provided in all the five questions of five marks category. Only one option in such question is to be attempted
3. All the 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 one sentence.
5. Question numbers **4 to 7** in **section - A** are **two marks** questions, to be answered in about **30 words each**.
6. Question number **8 to 19** in **section-A** are **three marks** questions, to be answered in about **50 words**.
7. Question number **20 to 24** in **section-A** are **five marks** questions, to be answered in about **70 words**.
8. Question numbers **25 to 42** 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.

SECTION-A

Attempt all questions from this section.

Q 1. Give reasons for the following.

Thermometer reading remains constant for a while during melting of a solid even though we continue to heat the solid. (1)

Q 2. Name the physical quantity whose unit is:

- (i) kgms^{-2} and
- (ii) $\text{Nm}^2\text{kg}^{-2}$ (1)

Q 3. "The direction in which an object moves is given by the direction of velocity of the object and not by the direction of acceleration". Give an example to justify this statement.(1)

Q 4. What is the difference between 'G' and 'g'? (2)

Q 5. It is difficult to balance our body when we accidentally slip on a peel of banana. Explain why? (2)

Q 6.

(a) Name any one bottom feeder that can be grown in composite fish culture.

(b) What are the problems faced in such a culture? How are they overcome? (2)

Q 7. List the two types of food requirements of dairy animals. (2)

Q 8. A gas jar containing air is upside down on a gas jar of bromine vapour. It is observed that after some time, the gas jar containing air also become completely reddish brown. (3)

(a) Explain why this happens.

(b) Name the process involved.

Q 9. With the help of a labelled diagram, describe in brief an activity to show sublimation of ammonium chloride. (3)

Q 10. Cough syrup is common medicine used in cold and cough. It contains alcohol (ethanol) as one of its constituents. Some of the people use it as an alternative of wine. (3)

(a) What should government do to prevent the misuse of such medicines?

(b) Which is the most common method for expressing the concentration of a solution?

(c) If 300 g of cough syrup contains 30 g glucose and 15 g alcohol, what is the concentration in the solution?

Q 11. Write any three differences between chemical change and physical change. (3)

Q 12. Give two examples each of (a) colloids (b) suspension (c) true solution. (3)

Q 13. Starting from a stationary position, Rehan paddles his bicycle to attain a velocity of 6 m/s in 30 s. Then, he applies brakes such that the velocity of the bicycle comes down to 4m/s in the next 5 s. Calculate the acceleration of the bicycle in both the cases. (3)

Q 14. Two objects of masses 100g and 200g are moving along the same line and direction with velocities of 2 ms^{-1} and 1 ms^{-1} respectively. They collide, and after the collision, the first object moves at a velocity of 1.67 ms^{-1} . Determine the velocity of the second object. (3)

Q 15. Prove the law of conservation of momentum with clear explanation, diagram and equation. (3)

Q 16. According to Newton's law of gravitation, the apple and the earth experience equal and opposite forces due to gravitation. But it is the apple that falls towards the earth and not vice-versa. Why? (3)

Q 17. Describe any three function of Golgi apparatus (3)

Q 18. Name the following: (3)

- (a) Epithelial tissue containing thin, flat, irregular cells
- (b) Epithelial tissue found in ducts of salivary glands
- (c) Epithelial tissue present in glands like thyroid and pituitary gland

Q 19. What are the management practices required to be taken in a livestock form to ensure healthy and productive livestock population? (3)

- (i) Which disease are the two children suffering from?
- (ii) Write any three modes of transmission of this disease.
- (iii) What is your viewpoint about both the steps taken by the school as well as the NGO?

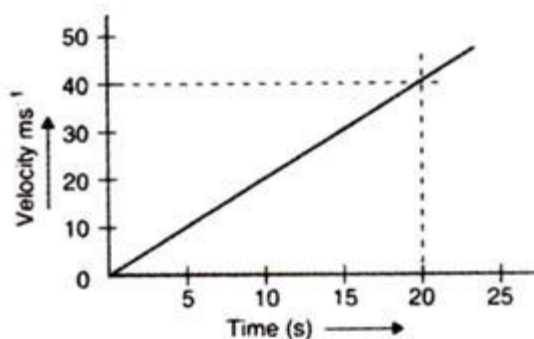
Q 20. (5)

- (a) Name the appropriate methods to separate the following :
 - (i) nitrogen from air
 - (ii) dye from blue ink
 - (iii) Cream from milk
 - (iv) ammonium chloride from common salt
- (b) Crystallization is a better technique than simple evaporation. Give one reason to justify the statement.
- (c) Draw a labeled diagram to show the process of separation of immiscible liquids.

Or

How will you separate dyes in black ink using chromatography? Explain it with the help of a diagram.

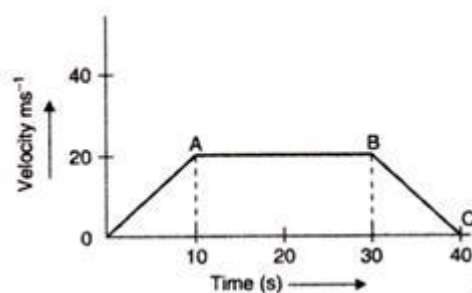
Q 21. The velocity-time graph for an object is shown in the following figure. (5)



- State the kind of motion that the above graph represents.
- What does the slope of the graph represent?
- What does the area under the graph represent?
- Calculate the distance travelled by the object in 15 s.

Or

The velocity time graph of a body is given as follows:



- State the kind of motion represented by OA and AB.
- What is the velocity of the body after 10 s and after 40 s?
- Calculate the retardation of the body.
- Calculate the distance covered by the body between 10th and 30th second.

Q 22. (5)

- (a) Define inertia. There are three solid balls, made up of aluminium, steel and wood of same shape and volume. Which of them would have highest inertia? Why?
 (b) Describe in brief an activity to illustrate the property of inertia of rest.

Or

- (a) Using Newton's law of motion, derive the relation between force and acceleration.
 (b) Define one Newton.
 (c) Which would require a greater force to accelerate - a 0.5 kg mass at 5 m/s^2 or a 4 kg mass at 2 m/s^2 ? Give reason.

Q 23. (5)

- (a) Draw a neat labeled diagram of a prokaryotic cell.
 (b) Why organisms like bacteria are called prokaryotes?

Or

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

Q 24. (5)

- (a) What is lactation period? Name two breeds of cattle which are selected for their long lactation period. Why are they crossed with local breeds?
 (b) What are roughage and concentrates?

Or

- (a) Define manures. What are its three different kinds? State two limitations of manures.
 (b) List two demerits of the continuous use of fertilizers.

Q25. To determine the melting point of ice a student immersed the thermometer in the crushed ice in a beaker. He then heated the beaker on a low flame and observed that during melting of ice the temperature: (5)

Section B

Q25. Reverberation produced in large auditoriums is due to: (1)

- (a) Reflection of sound by windows
- (b) Absorption of sound by walls
- (c) Reflection of sound by walls and ceiling
- (d) Absorption of sound by floor

Q26. The least count of a spring balance is 1 g wt. When it is suspended freely without any weight attached to the hook, the pointer is just in front of second small division on the scale. The zero error is: (1)

- (a) Only iron filings gets attracted towards magnet
- (b) Only sulphur powder gets attracted towards magnet
- (c) Both sulphur powder and iron filings gets attracted towards magnet
- (d) Neither iron filling nor sulphur gets attracted towards magnet.

Q27. When a mixture of sulphur powder and iron filings is heated: (1)

- (a) -2 g wt
- (b) +2 g wt
- (c) Zero
- (d) +1 g wt

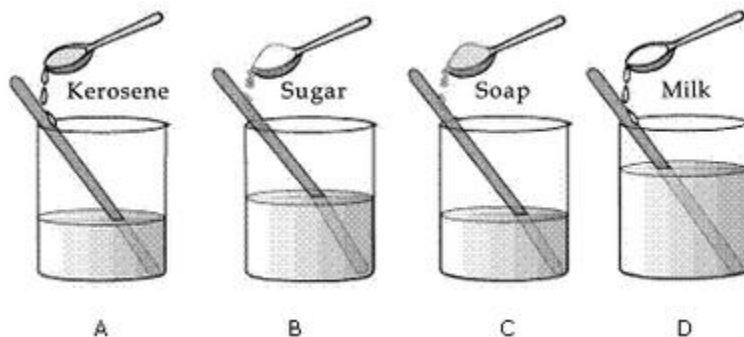
Q 28. A student added milk, white of an egg, common salt and sand separately to water kept in four separate beakers. He stirred the mixtures well and filtered each of them. On filtering, he obtained solid residue on the filter paper in case of: (1)

- (a) Milk
- (b) White of an egg
- (c) Common salt
- (d) Sand

Q29. A student sets up an apparatus for determining the boiling point of water. He records the temperature after regular intervals and finds that water when it begins to boil: (1)

- (a) Remains constant
- (b) Continuously rises
- (c) First rises and then becomes constant
- (d) First remains constant and then rises

Q30. The following substances are added to water in a beaker as shown below. The mixture is stirred well. A true solution is found in the beaker. (1)



- (a) A
- (b) B
- (c) C
- (d) D

Q 31. (1)

A mixture of marble powder, common salt and ammonium chloride is well shaken in water and then filtered. The residue left on the filter paper will be:

- (a) Common salt
- (b) Ammonium chloride
- (c) Marble powder
- (d) Ammonium chloride and marble powder.

Q 32. Mixture of ammonium chloride and salt can be separated by: (1)

- (a) Dissolving in water and evaporation
- (b) Moving a magnet through the mixture
- (c) Heating the solid mixture in a china dish covered with inverted funnel
- (d) Dissolving the mixture in carbon disulphide

Q 33. A man pushes on a wall out of frustration with a force of 30 Newton. What force does the wall exert on the man? (1)

- (a) 60 N
- (b) 30 N
- (c) 15 N
- (d) 0 N

Q 34. Action and reaction forces are always:

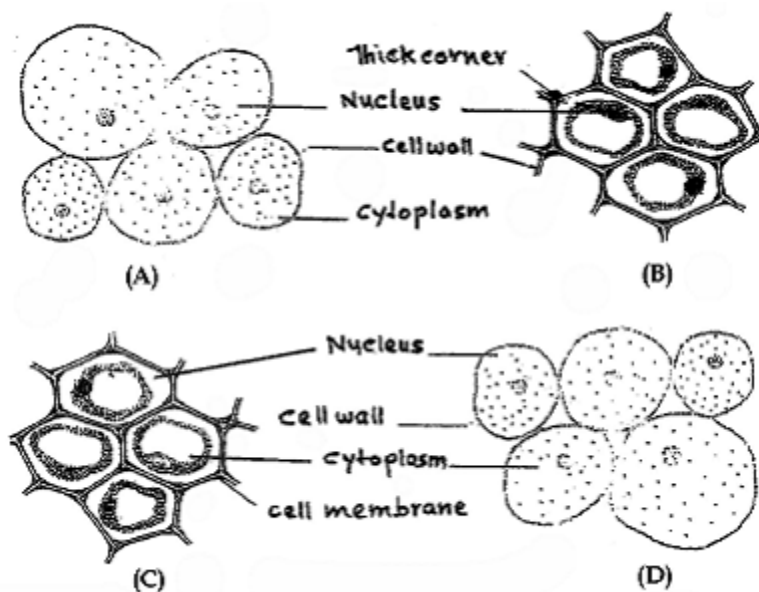
- (a) Equal and in same direction.
- (b) Unequal and in same direction.
- (c) Equal and in opposite direction
- (d) Unequal and in opposite direction

Q 35. To prepare a temporary stained mount of onion peel, a student must take the material from: (1)

- (a) Green leaf of spring onion
- (b) Crushed pulp of onion
- (c) Dry scale leaf of onion
- (d) Thin layer of fleshy leaf base of onion

Q 36. (1)

The correctly labelled diagram of collenchyma tissue (as observed in the laboratory) is:

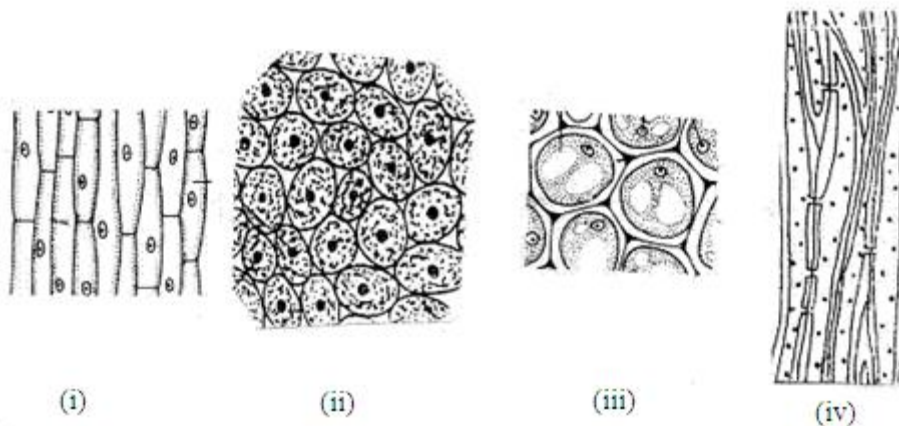


- (a) A
- (b) B
- (c) C
- (d) D

Q 37.

(1)

The correct figure of Sclerenchyma tissue is



- (a) (i)
- (b) (ii)
- (c) (iii)
- (d) (iv)

Q 38. In the preparation of a temporary mount of onion peel the commonly used stain is: (1)

- (a) Safranin
- (b) Iodine solution
- (c) Methylene blue
- (d) Glycerine

Q 39.

(1)

The characteristic features to identify a nerve cell are:

- (a) Round or oval cells with blobbed nucleus and cytoplasmic granules.
- (b) Cell body with branched cytoplasmic extensions at one end and a long projection at the other end.
- (c) Spindle shaped cell with a big central nucleus.
- (d) Red colored, biconcave disc shaped enucleated cells.

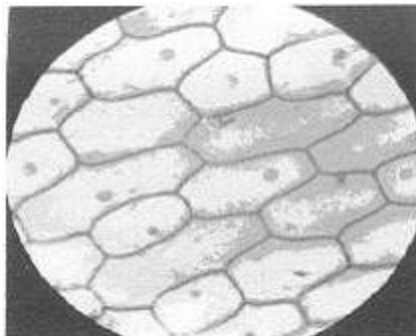
Q 40. (1)

Human cheek cells stained in methylene blue and mounted in glycerin were observed with the help of a compound microscope. The components of the cell which would be seen are:

- (a) Cell wall, cytoplasm, nucleus
- (b) Plasma membrane cytoplasm, nucleus
- (c) Plasma membrane, cytoplasm, nucleus, mitochondria
- (d) Cell wall, plasma membrane, cytoplasm, nucleus

Q 41. (1)

A teacher focused the slide given below under a compound microscope. Which of the following students identified it correctly?



- (a) Sheela identified it as cheek cells.
- (b) Madhu identified it as squamous epithelium.
- (c) Balaji identified it as parenchyma.
- (d) Shanti identified it as onion peel.

Q 42. Animal cells are commonly stained with: (1)

- (a) Methylene blue
- (b) Acetocarmine
- (c) Safranin
- (d) Iodine solution