

SUBJECT: SCIENCE

MAX. MARKS : 80

CLASS : IX

DURATION : 3 HRS

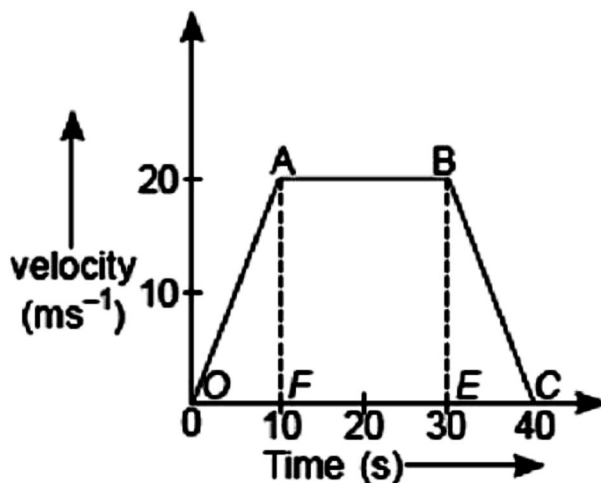
General Instructions:

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 number **1 to 2** in **Section-A** are **one mark** question. These are to be answered in **one word** or in **one sentence**.
5. Question numbers **3 to 5** in **Section-A** are **two marks** questions. These are to be answered in about **30 words** each.
6. Question numbers **6 to 15** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.
7. Question numbers **16 to 21** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
8. Question numbers **22 to 27** in **Section-B** are questions based on practical skills and are **two marks** questions.

SECTION – A

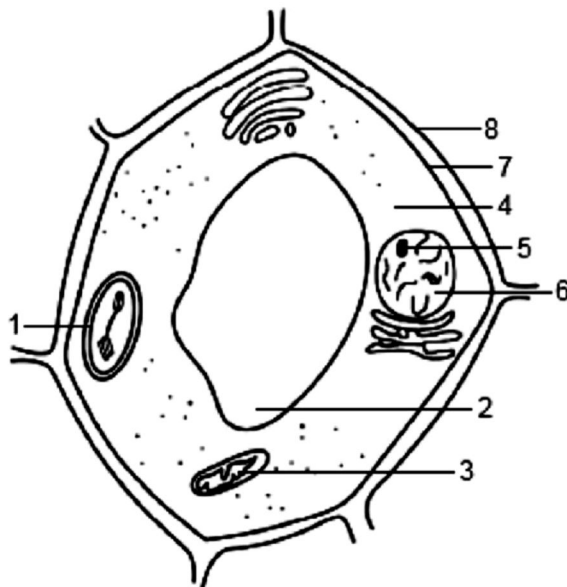
1. Name the property of gases due to which it is possible to fill CNG in cylinders for using as fuel in cars.
2. What is the numerical ratio of average velocity to average speed of an object moving along a straight line path?
3. What is meant by free fall? A ball is dropped from the roof of a building. It takes 10 seconds to reach the ground. Find the height of the building. ($g = 9.8 \text{ m/s}^2$)
4. Define biotic factors. Name a few biotic factors which damage the food material during storage.
5. (a) What are concentrates in animal feed ?
(b) Name two internal parasites that cause diseases in animals.
6. Differentiate between evaporation and boiling. Give any three differences.
7. (a) Why does the water kept in an earthen pot become cool in summer? (b) Draw a well labelled diagram showing sublimation of camphor. (c) Convert: 340 K to degree Celsius.
8. A solution of alcohol in water has been prepared by mixing 150 ml of alcohol with 600 ml of water. Calculate the volume. Percentage of the solution.
9. What is chromatography? State its principle. Write one advantage of chromatography over other techniques.
10. Define the following terms: Protoplasm, cytoplasm, nucleoplasm
11. Name the following and give one characteristic of each.
 - (a) Living tissue that provides mechanical support in plants.
 - (b) Highly specialised cells for being stimulated and then transmitting the stimulus very rapidly within the body of animals.
 - (c) Animal tissue with elongated cells and contractile proteins responsible for movement.

12. The velocity-time graph of a body is shown below: (a) State the kind of motion represented by OA and AB. (b) Find the velocity of the body after 10 s and after 40 s. (c) What is the negative acceleration of the body? (d) Find the distance travelled between 10th and 30th second.



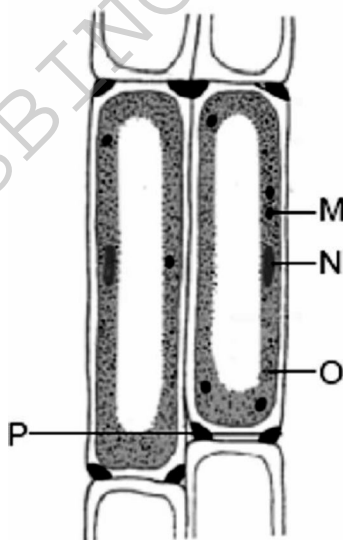
13. (a) State the law of conservation of momentum.
 (b) A body of mass 2 kg, initially moving with a velocity of 10 m/s, collides with another body of mass 5 kg at rest. After collision velocity of first body becomes 1 m/s. Find the velocity of second body.
14. What is meant by buoyancy? Why does an object float or sink when placed on the surface of a liquid?
15. Rahul and Rachna were practicing floriculture in their farm. They sold the flowers to florists in India. They felt that if they start bee-keeping too, their income will increase. They obtained more information from the local officer.
 (i) What is pasturage and how is it related to quality of honey?
 (ii) Name a bee variety which is commonly used for commercial honey production.
 (iii) Why society would appreciate Rahul and Rachna?
16. (a) What is meant by the word 'Latent' in latent heat.
 (b) Explain with example of water: (i) latent heat of fusion, and (ii) latent heat of vaporization
17. Identify the physical and chemical changes from the following:
 (a) Heating the mixture of iron and sulphur.
 (b) Ripening of fruits
 (c) Dissolution of salt in water
 (d) Rusting of iron-chair.
 (e) Making egg omelets.
18. What are neurons? Where are they found in the body? What functions do they perform in the body of an organism?
19. Draw velocity time graph for a body that has initial velocity 'u' and is moving with uniform acceleration 'a'. Use it to derive $v = u + at$; $s = ut + at^2$, and $v^2 = u^2 + 2as$
20. (a) State Newton's second law of motion and show that the first law of motion can be mathematically stated from the mathematical expression for the second law of motion.
 (b) A stone dropped from a window reaches the ground in 0.5 seconds (given $g = 10 \text{ ms}^{-2}$).
 (i) Calculate the speed just before it hits the ground.
 (ii) What is the average speed at $t = 0.5 \text{ s}$?
 (iii) Calculate the height of window from the ground.

21. Given below is a diagrammatic sketch of a certain generalised cell. (a) Name the parts numbered as 1 to 8. (b) Is it a plant cell or an animal cell? Give two reasons in support of your answer. (c) Give the functions of parts marked as 1, 6 and 8.

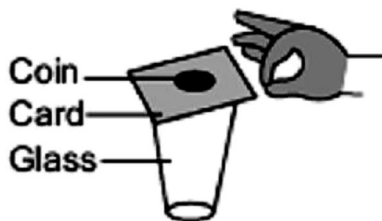


SECTION – B

22. Out of honey or ink which will diffuse faster and why?
23. You are provided with a solution of salt in water in one jar and mixture of salt and sand in other. Can you state one property in which they resemble and differ from one another.
24. Preetha was observing live cells of onion in the biology laboratory and she observed cell wall, cytoplasm and nucleus clearly. Suddenly her friend who was doing chemistry experiment spilled a few drops of salt water on the slide. After sometime Preetha observed the slide and found some changes. (a) What would have been the change in the live cells of onion peel after adding salt water? (b) Name the type of process.
25. Given is the diagram showing longitudinal section of collenchyma tissue. Label the parts 'M', 'N', 'O' and 'P' in the given diagram.



26. In the below experimental set-up, a student gives the card a sharp and fast horizontal flick with a finger. (i) What will happen to the coin? (ii) State reason for your answer.



27. Gravitational force is known to exist between all bodies in this universe. Due to existence of gravitational force between the earth and the moon, moon should experience a pull towards the earth and vice versa. Do you expect the orbit of the moon to change due to this force of attraction? Give reason in support of your answer.
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