

SAMPLE QUESTION PAPER - 9

Solved _____

Time : 3 Hours

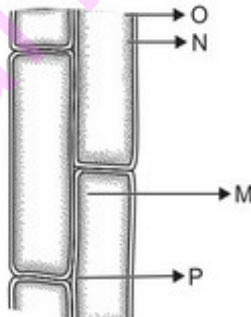
Maximum Marks : 90

General Instructions :

1. The question paper comprises of two sections, A and B. You have 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 one sentence.
5. Question numbers 4 to 6 in Section A are two marks questions, to be answered in about 30 words.
6. Question numbers 7 to 18 in Section A are three marks questions, to be answered in about 50 words.
7. Question numbers 19 to 24 in Section A are five marks questions, to be answered in about 70 words.
8. Question numbers 25 to 36 in Section B are based on practical skills. Question 25 to 33 carry one mark each and Question numbers 34 to 36 carry two marks each.

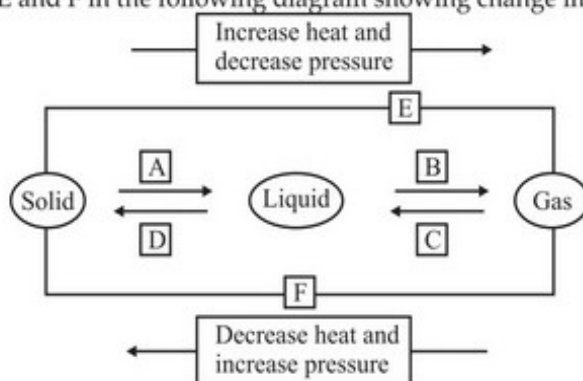
SECTION 'A'

1. When a body is thrown upwards, its velocity becomes zero at the highest point. What will be its acceleration at this point? (HOTS) 1
2. Mention the change in human red blood cells when they are placed in hypotonic salt/sugar solution. 1
3. Why does the sole of the shoe wear out? 1



4. The given diagram shows longitudinal section of collenchyma tissue. Label the parts 'M', 'N', 'O' and 'P'. 2
5. A suspension is obtained on dissolving chalk powder in water. Give any four reasons to support the fact that mixture thus obtained is a suspension only. 2

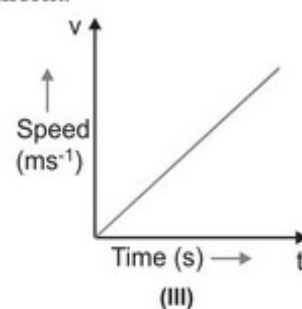
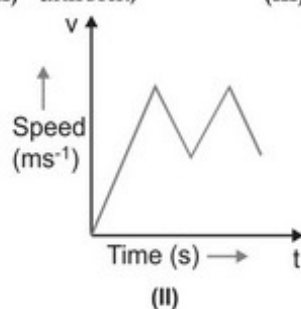
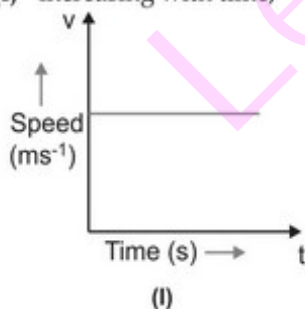
6. Give reasons for the following:
- Wearing of cotton clothes in summer is more comfortable.
 - The water kept in an earthen pot becomes cool in summer.
7. Mention three different ways in which crop plants can be attacked by insect pests. Also suggest one control measure and two preventive measures against pests.
8. Why are manures and fertilizers used in fields? A farmer irrigated his field excessively just after applying fertilizers. Explain why this is not a correct practice?
9. Name A, B, C, D, E and F in the following diagram showing change in the state.



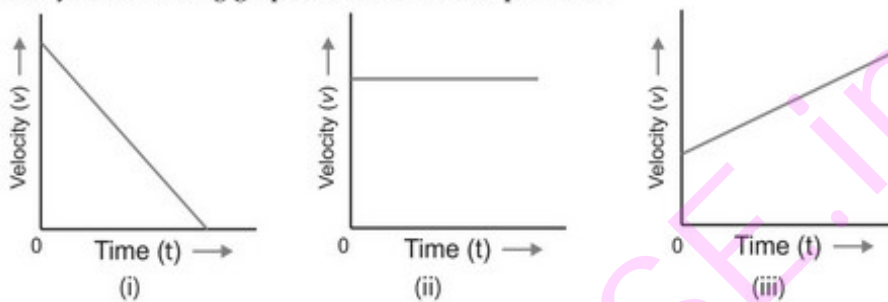
10. The table given below shows number of grams of different solids in 100 g of the solvents - water, alcohol and chloroform (all at 20°C).

SOLVENT	SALT	SUGAR	IODINE	CHALK	UREA
WATER	36	204	0.6	0	100
ALCOHOL	0	0	20	0	16
CHLOROFORM	0	0	3	0	0

- Which solid dissolves best in water at 20°C?
 - Which solid is maximum soluble in alcohol?
 - Which solid is soluble in all the three solvents?
 - What is saturated solution? How can a saturated solution be made unsaturated?
11. Osmosis is the movement of water molecules from the solution with lower solute concentration (hypotonic solution) to the solution with higher solute concentration (hypertonic solution) through a selectively-permeable membrane. The movement takes place due to the osmotic gradient created by difference in concentration of the solutions on both sides of the membrane and the end result is a state where osmotic equilibrium is reached wherein movement of the fluid ceases.
- What is the importance of osmosis in daily life? Give four examples.
 - Is it useful for plants?
- (Value Based Question) 3
12. (a) State one point of difference between xylem and phloem.
 (b) Draw a neat diagram of xylem vessel and a tracheid.
13. Write the difference between striated muscles, smooth muscles and cardiac muscles on the basis of their shape and number of nuclei.
14. A few speed-time graphs for motion of objects moving along a straight line are given below. Which of these graphs represent the motion of the body whose speed is:

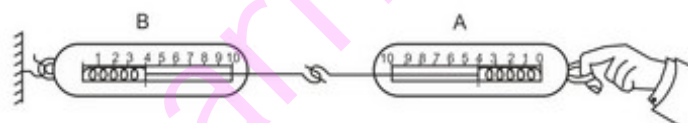


15. (a) When two bodies X and Y collide with each other, X exerts a force of 5 N on Y towards the East. What is the force exerted by Y on X? Justify your answer stating the law. 3
- (b) A circular groove is provided in a saucer to place the cup of tea in it. Give reason. 3
16. A girl of mass 50 kg jumps out of a moving boat of mass 300 kg on to the bank with a horizontal velocity of 3 m/s. With what velocity does the boat begin to move backwards? 3
17. Determine the magnitude of the gravitational force between a planet of mass 6×10^{24} kg and a 1 kg object on its surface. Let the radius of the planet be 6×10^6 m and $G = 6.67 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$. 3
18. To estimate the height of a bridge over a river, a stone is dropped freely in the river from the bridge. The stone takes 2 seconds to touch the water surface in the river. Calculate the height of the bridge from the water level. 3
19. Define fumigation and fumigant. Give an example of a fumigant. How does fumigation differ from spraying? Give two points. 5
20. (a) You want to wear your favourite shirt to a party, but the problem is that it is still wet after a wash. Mention three steps with reason that you will take to dry it faster. 5
- (b) It is a hot summer day. Priyanshi and Ali are wearing cotton and nylon clothes respectively. Who do you think will be more comfortable and why? 5
- (c) During rainy season, we feel sticky and uncomfortable even under the fan. Why? 5
21. With a neat labelled diagram explain the process used for separating acetone and water from their mixture. List two criteria that must be fulfilled for using this process. 5
22. (a) Identify the following graphs and answer the questions:

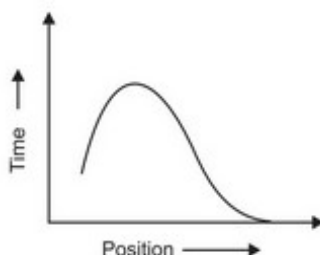


- (i) Which of the graphs indicates negative acceleration? Why? 5
- (ii) What do you infer from the graph in which velocity-time graph is parallel to the time axis? 5
- (iii) Which of the graphs represents a body moving with initial velocity not equal to zero, but with constant acceleration? Justify your answer. 5
- (b) A bus starting from rest moves with a uniform acceleration of 0.1 m/s^2 for 2 minutes. Find:
- (i) the speed acquired (ii) the distance travelled. 5

23.



- (a) Look at the given diagrams and answer the following questions:
- (i) When a force is applied through the free end of the spring balance 'A' the reading on the spring balance 'A' is 20 g wt. What will be the reading shown by the spring balance 'B'? 5
- (ii) Write the reason for your answer.
- (b) A balloon is filled with air. If its mouth is untied, air is released from its mouth in the downward direction. Write the other observations made by you. Justify your answer. 5
24. (a) Ashima plotted a graph of time versus position as shown in the following figure. Is such time variation of position observed in nature? Give reason for your answer. 5



(b) Is it possible that a body moves horizontally with an acceleration in vertical direction ?

(HOTS) 5

SECTION 'B'

Choose the correct option :

25. Shivani took 2 ml of food extract in a test-tube and added few drops of conc. hydrochloric acid to it. She observed magenta colour in the test-tube, which indicates the presence of :
- (a) metanil yellow in the food extract
 (b) turmeric powder in the food extract
 (c) argemone oil in the food extract
 (d) saw dust in the food extract 1
26. While heating a mixture of ammonium chloride and sodium chloride, it is advised to keep your face away from the apparatus because :
- (a) ammonium chloride vapours may cause irritation to your eyes and nose
 (b) sodium chloride vapours may cause irritation to your eyes
 (c) chloride vapour may cause irritation to your eyes
 (d) ammonium vapours may block your nose 1
27. Out of the given four mixtures, the one that appears clear and transparent is :
- (a) sugar and water (b) sand and water
 (c) starch and water (d) chalk powder and water 1
28. Each of the four students took a sample of iron sulphide compound. A gas was liberated when each student added equal volume of dilute hydrochloric acid. They reported the following observations :

STUDENT	COLOUR OF GAS	ODOUR OF GAS	FLAMMABILITY OF GAS
A	Colourless	Bad smell	Non-flammable
B	Colourless	Odourless	Non-flammable
C	Green	Bad smell	Flammable
D	Yellow	No smell	Non-flammable

The correct observations were reported by student :

- (a) A (b) B
 (c) C (d) D 1
29. When dilute sulphuric acid is added to zinc granules, it is observed that :
- (a) brown fumes evolve
 (b) bubbles start coming out from the surface of zinc granules
 (c) the reaction mixture turns blue
 (d) a yellow colour is formed
30. While preparing a temporary mount of onion peel, the excess glycerine on the slide is :
- (a) left as it is (b) drained by tilting the slide
 (c) allowed to evaporate (d) gently wiped with a filter paper 1

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31. A student observed the slide of a nerve cell and labelled the branches around the cell body as:
- | | | |
|-----------|------------------|---|
| (a) cyton | (b) dendrite | |
| (c) axon | (d) nerve ending | 1 |
32. A rectangular wooden block, open from one side, is lying on a horizontal table. Different weights are kept in the box one-by-one. To establish relationship between weight of the block and the minimum force required to just move it using a spring balance, it is observed that the force required to just move the rectangular block is minimum when we put a weight of:
- | | | |
|-------------|-------------|---|
| (a) 40 g wt | (b) 45 g wt | |
| (c) 35 g wt | (d) 30 g wt | 1 |
33. While performing an experiment to establish relationship between weight of a rectangular wooden block lying on a horizontal table and the minimum force required to just move it using a spring balance, a student calculated the minimum force required as 180 g wt, to move the wooden block of 400 g wt. If he places another block of mass 100 g wt over it, the force required will:
- | | | |
|-----------------|------------------------------|---|
| (a) remain same | (b) decrease | |
| (c) increase | (d) may decrease or increase | 1 |

Answer the following:

34. Write any two correct observation to identify schlerenchyma tissue. 2
35. Write the first step required to calculate the percentage of water absorbed by raisins. 2
36. 5 g of raisins were placed in distilled water for 24 hours. The mass of soaked resins was found to be 7 g. Calculate the percentage of water absorbed by the raisins. 2

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