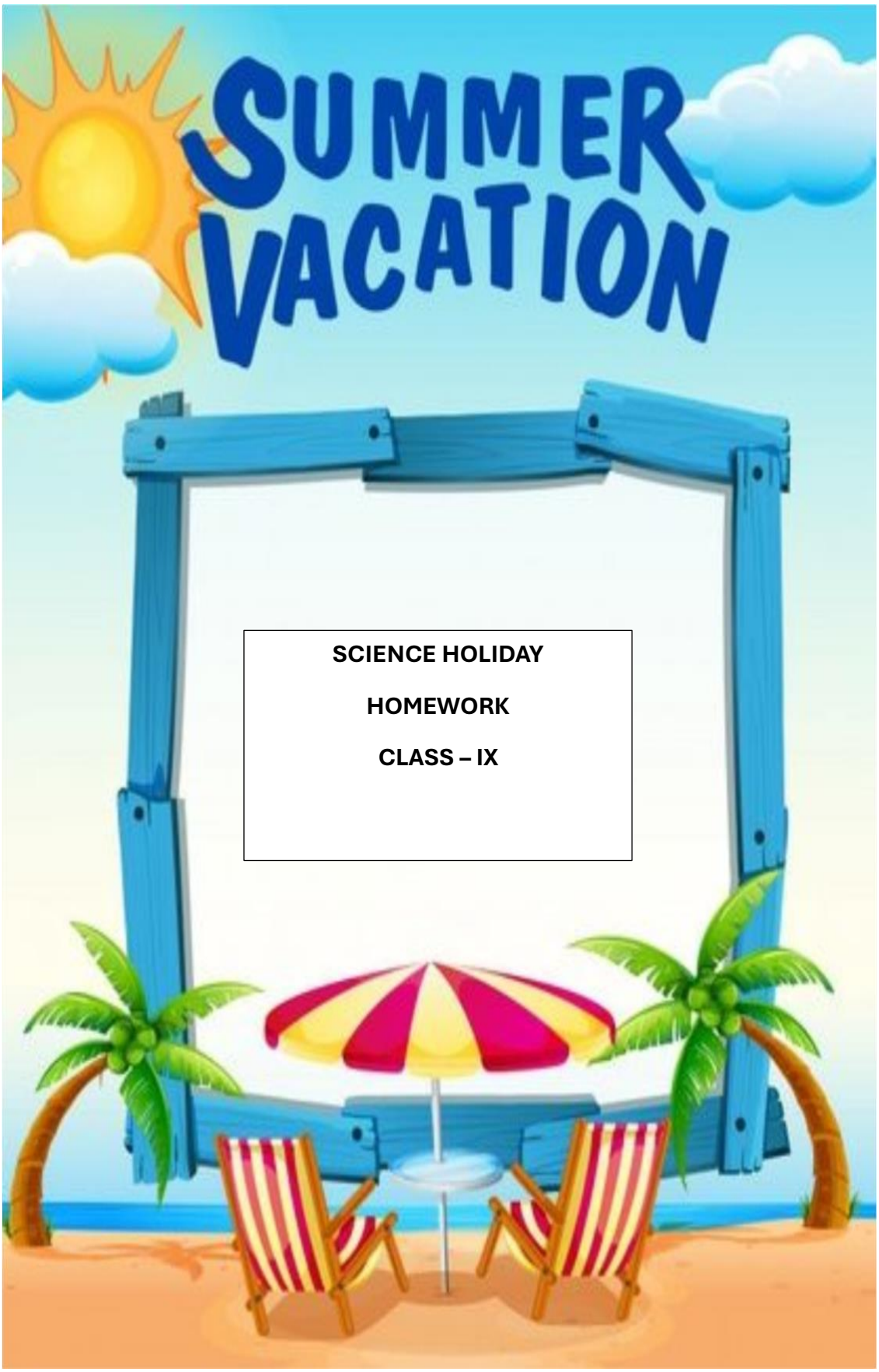


SCIENCE HOLIDAY

HOMEWORK

CLASS – IX

Dear Parents

We wish you and your child a very happy summer holidays . It's time to enjoy and create a bond with family, friends and relatives. To utilize this time in the most constructive way we have prepared Holiday Homework for the students on the principle of 'learning by doing' for their holistic development.

So here we start.....

Morning Blessings

Help your child inculcate good habits like doing ''Surya Namaskar'' and encourage him/her to wish all elders in the morning. If possible, visit a temple or any other religious place of your choice.

Physical Development

- Take the child with you for morning/evening walk.
- Play different games like hide and seek, football, ludo, chess, snakes and ladders, carrom board etc. with your child.

Language Development

- Encourage your child to converse in English.
- Choose any 1 object from your surroundings every day. Let the child speak few lines on it.

Being Good

- Help your child inculcate good habits like doing 'Surya Pranam' & encourage him / her to greet all elders in the morning.
- Help your child to use 4 magical words : PLEASE, SORRY, THANK YOU, EXCUSE ME as the part of basics of good manners.
- Encourage your child to listen.
- Gently care for animals. Encourage your child to be empathetic towards animals.
- Involve your child to sow a plant in a pot and give water. Give knowledge about plants and trees. Explain to them that they are an integral part of their growing
- Have at least two meals together with your children. Teach them the importance and hard work of the farmer and ask them not to waste their food.
- Let them take their own plates after every meal . Children learn dignity of labour from such activities.

Health and Hygiene

"Healthy mind resides in a healthy body." So start your day early and set a routine even during vacations. In addition you and your little one can spend some quality time playing, cycling, swimming to keep yourself fit and healthy. Encourage your child to take care of personal hygiene by inculcating the habits like washing hands, practicing yoga, eating healthy food etc.

General instructions:-

1. Attempt your work neatly.
2. Use loose sheets to write answers.
3. Write your Name, Class-section and Roll number.

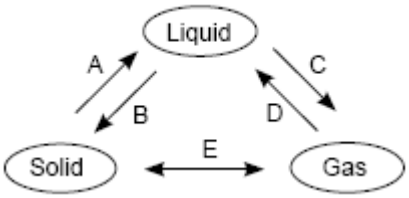
Revise all the explained chapters and learn question and answers.

1 (a) Define diffusion. Explain the rate of order of diffusion in solids, liquids and gases.
(b) State the effect of temperature on diffusion.

2(a) CO_2 is a gas. Write its two gaseous properties to justify it.
(b) How can we liquefy a gas?
(c) Solid CO_2 is also known as dry ice. Why?
(d) Write the full form of:
(i) CNG (ii) LPG

3(a) Define latent heat of fusion. Why is it called latent heat?
(b) How does the presence of impurities affect the boiling point and freezing point of a substance?
(c) What is dry ice? How is it stored?

4Explain the different processes involved in the flowchart given below.



5Give reasons for the following:
(a) Camphor disappears if kept in open air for a few days.
(b) Wet clothes do not dry easily on a rainy days.
(c) We sweat more on humid days.

6(a) Wax is heated in a china dish. How will the following change during heating–
(i) kinetic energy of particle
(ii) inter particle distance

(b) Melting points of three substances A, B, C are 52°C, 175°C and 80°C. Arrange them in the decreasing order of the interparticle force of attraction in each of them. Give reason for your answer.

3

7(a) "Evaporation causes cooling". Explain the reason for this effect.
(b) Explain two examples from our daily life where we feel the effect of cooling due to evaporation.

3

8 A few substances are arranged in the increasing order of 'forces of attraction' between their particles. Which one of the following represents a correct arrangement?

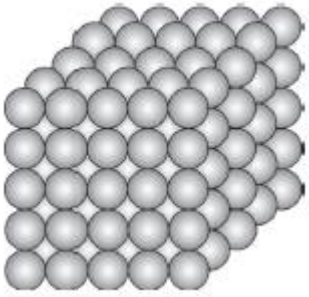
(i) Water, air, wind (ii) Air, sugar, oil
(iii) Oxygen, water, sugar (iv) Salt, juice, air

9 On converting 25 °C, 38 °C and 66 °C to Kelvin scale, the correct sequence of temperature will be

(i) 298 K, 311 K and 339 K
(ii) 298 K, 300 K and 338 K
(iii) 273 K, 278 K and 543 K
(iv) 298 K, 310 K and 338 K

1

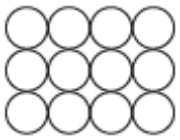
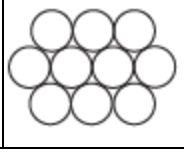
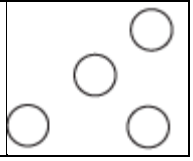
10 A student made a model to show how particles of a substance X are arranged. His friends observed the model and concluded that Substance X is a solid. What supports their conclusion? [CBSE T.E.R.M.*]



(a) The particles are closely packed that allows Substance X to change its volume.
(b) The particles are fixed at their positions that allows Substance X to retain its shape.
(c) The particles are bonded to each other that allows Substance X to maintain a fixed mass.
(d) The particles are identical to each other that allows Substance X to have a uniform composition.

1

11The table shows three substances and their properties.

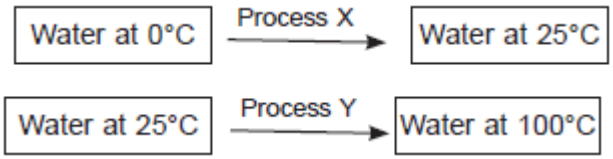
State	Substance A	Substance B	Substance C
Arrangement of Particles	Close together regular pattern	Close together Random	For apart Random
Movement of Particles	Vibrate on the Spot	Move around Move around each other	Move quickly in directions
Diagram			

Which substances are NOT in gaseous state? [CBSE T.E.R.M.*]
(a) Substance A only
(b) Substance C only
(c) Substance A and B
(d) Substance B and C

12Choose the correct statement out of the following.
(a) Conversion of solid into vapours without becoming liquid is called evaporation.
(b) Conversion of vapours into solid without becoming liquid is called sublimation.
(c) Conversion of solid into liquid is called sublimation.
(d) Conversion of liquid into vapours is called fusion.

1

13The image shows two changes.



Identify process X and Y. [CBSE T.E.R.M.*]
(a) Process X – freezing; Process Y – melting
(b) Process X – melting; Process Y – evaporation
(c) Process X – condensation; Process Y – melting
(d) Process X – evaporation; Process Y – condensation

14In the following Questions, the Assertion (A) and Reason (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following:
(a) Both the Assertion and the Reason are correct and the Reason is the correct explanation of the Assertion.

(b) The Assertion and the Reason are correct but the Reason is not the correct explanation of the Assertion.

(c) Assertion is true but the Reason is false.

(d) The statement of the Assertion is false but the Reason is true.

Assertion: Cold drink bottle kept in freezer breaks.
Reason: CO_2 gas exerts high pressure on the walls of bottle when water changes into ice.

15. Assertion: In pressure cooker temperature of water becomes more than 100°C.

Reason: Boiling point is directly proportional to pressure acting on liquid.

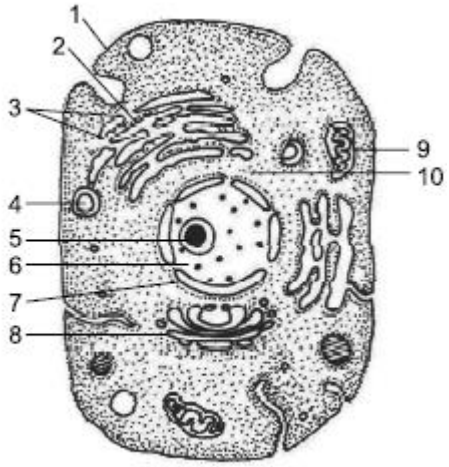
1

16. Assertion: Molten ionic solid conducts electricity.

Reason: On melting ions become free to move.

1

1Given below is a diagrammatic sketch of electron microscopic view of an animal cell :
(a) Label the parts indicated by lines as 1 to 10.
(b) Give two reasons to support that it is an animal cell.
(c) How many mitochondria are shown in the diagram?



A type of animal cell

5

2 Why is mitochondria called 'power-house of cell'? Give three similarities and one difference between mitochondria and plastid.

5

3 Draw the diagram of a plant cell and label any three parts which make it different from an animal cell. 3

4 Name the cell organelles which are called 'suicide bags' and 'power-house' of the cell. Why are they so called? Give reason. 3

5 Where are chromosomes located? What are they composed of? What is chromatin material and how does it change just before the cell divides? 3

6 Name:
(a) An organelle which has its own genetic material
(b) An organelle rich in digestive enzymes
(c) Nucleic acid present in nucleus of cell 3

7 The structure/organelle of a cell that functions as a passage for intracellular transport as well as a manufacturing surface, is
(i) ribosome (ii) endoplasmic reticulum
(iii) plastids (iv) plasma membrane 1

8 Analyse the statements and pick up the right one regarding mitochondrial membranes from the following :
(i) The inner membrane is longer than the outer membrane
(ii) The outer membrane is longer than the inner membrane
(iii) Both the inner and the outer membranes are almost equal in length.
(iv) Mostly mitochondria have a single membrane. 1

9 The cell organelles (other than the nucleus) which contain DNA are
(i) plastids and lysosomes
(ii) mitochondria and Golgi apparatus
(iii) Golgi apparatus and lysosomes
(iv) plastids and mitochondria 1

10 Engulfing of food materials or foreign bodies by cells like Amoeba is called
(i) diffusion (ii) endocytosis
(iii) osmosis (iv) plasmolysis 1

11 A prokaryotic cell does not possess
(i) cell membrane (ii) cell wall
(iii) nuclear membrane (iv) both (a) and (c) 1

12 The major function of Golgi apparatus is

(i) detoxification (ii) fermentation
(iii) translocation (iv) secretion

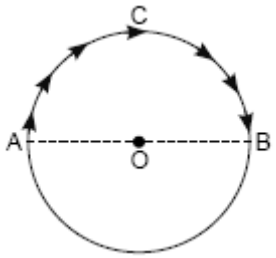
1

13 Cell wall of which one of these is not made up of cellulose?

(i) Bacteria (ii) Hydrilla (iii) Mango tree (iv) Cactus

1

An insect moves along a circular path of radius 10 cm with a constant speed. It takes 1 min to move from a point on the path to the diametrically opposite point, find (i) the distance covered (ii) the speed (iii) the displacement (iv) the average velocity.



5

2

A girl rides a bicycle with a speed of 10 km/h for 2 h and 15 km/h for next 3 h. Find the distance moved by her and average speed.

2

3

A body is thrown vertically upwards with a velocity and caught back.

(a) What is its displacement and distance travelled?

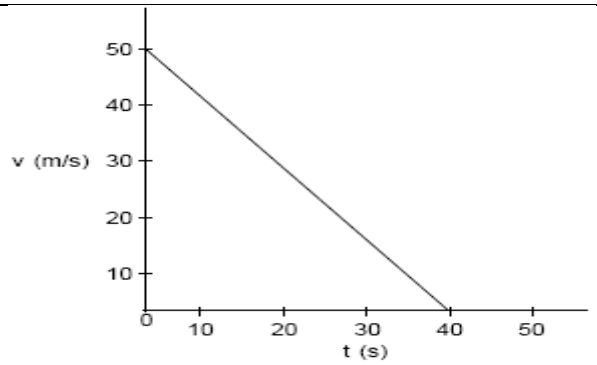
(b) How do the displacement and distance change if its velocity of projection is halved?

2

4

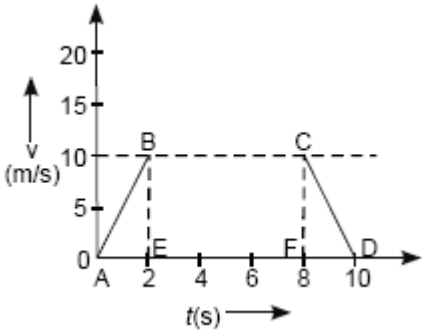
(a) What can be depicted from the graph regarding the motion of the object?

(b) Find the value of acceleration from the graph.



2

5 Find the displacement of a body whose velocity time graph is shown below :

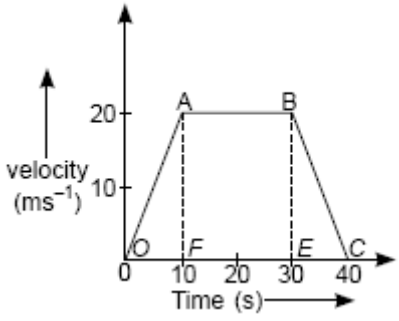


2

6 Starting from a stationary position, Anil paddles his bicycle to attain a velocity of 10 ms^{-1} in 25 s. Then, he applies brakes such that he again comes to rest after next 50 s. Calculate the acceleration of the bicycle in both cases. Also find the total distance covered by Anil.

3

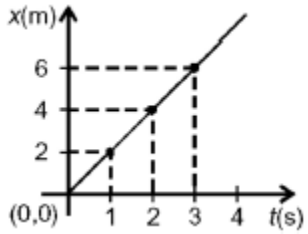
7 The velocity-time graph of a body is shown below:
(a) State the kind of motion represented by OA and AB.
(b) Find the velocity of the body after 10 s and after 40 s.
(c) What is the negative acceleration of the body?
(d) Find the distance travelled between 10^{th} and 30^{th} second.



3

8

The slope of the x – t graph is a measure of



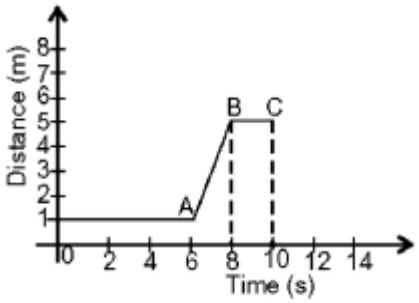
(i) velocity = 2 ms^{-1} (ii) acceleration = $\frac{1}{2}$ ms^{-2}

(iii) velocity = $\frac{1}{2}$ ms^{-2} (iv)acceleration = 2 ms^{-2}

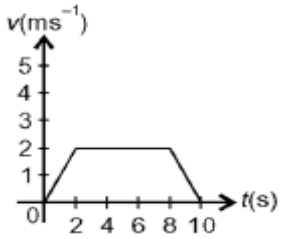
1

9

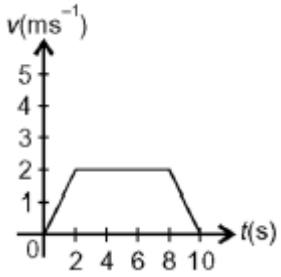
The v–t graph for the x–t graph given here is best drawn as



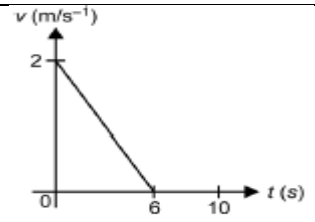
(i)



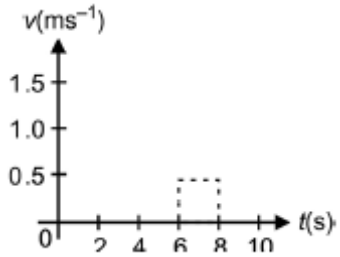
(ii)



(iii)



(iv)



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10

In a uniformly accelerated motion,

A : v – t graph is a straight line not parallel to t or v axis.

B : x – t graph is not a straight line.

C : Slope of v – t graph varies.

D : Slope of x – t graph is constant.

(i) Only A is correct

(ii) Only A and B are correct

(iii) Only A, B and C are correct

(iv) Only B, C and D are correct

1

11

Area below v – t graph is a measure of

(i) Acceleration

(ii) Displacement

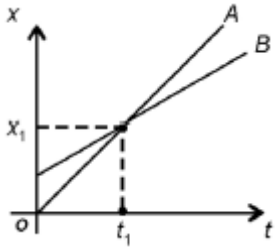
(iii) Angular speed

(iv) Angular acceleration

1

12

One can conclude from the given x-t graph that



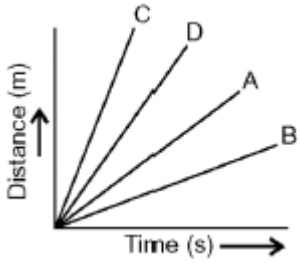
(i) $V_A > V_B$

(ii) $V_A < V_B$

(iii) $V_A = V_B$ at x_1
(iv) $a_A = a_B$ [1] 0.

1

13 Four cars A, B, C and D are moving on a levelled road. Their distance versus time graphs are shown in figure. Choose the correct statement

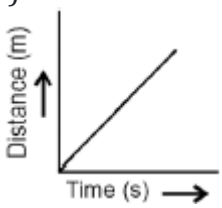


(i) Car A is faster than car D.
(ii) Car B is the slowest.
(iii) Car D is faster than car C.
(iv) Car C is the slowest.

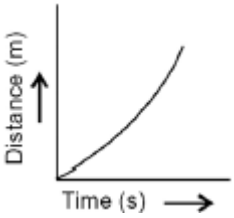
1

14
Which of the following figures represent uniform motion of a moving object correctly?

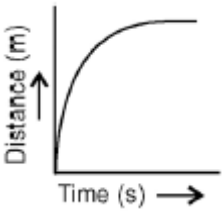
(i)



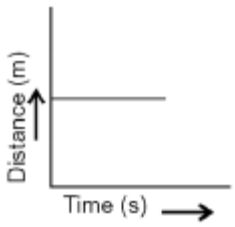
(ii)



(iii)



(iv)



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