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Grade : IX	Subject : Science	Chapter : 1,5,8,9
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Section A

1. CO_2 can be easily liquified and even solidified because
(a) It has weak forces of attraction
(b) It has comparatively more force of attraction than other gases
(c) It has more intermolecular space
(d) It is present in atmosphere.

2. Which of the following has highest kinetic energy?
(a) Particles of ice at 0 °C (b) Particles of water at 0 °C
(c) Particles of water at 100 °C (d) Particles of steam at 100 °C

3. Bose-Einstein Condensate have
(a) Very low kinetic energy (b) Low kinetic energy
(c) High kinetic energy (d) Highest kinetic energy.

4. Which of the following is most suitable for summer?
(a) Cotton (b) Nylon (c) Polyester (d) Silk.

5. Which of the following is incorrect about plasma?
(a) Fluorescent tube and neon sign bulbs consist of plasma.
(b) The gas gets ionized when electrical energy flows through it.
(c) It consists of super-energetic and super-excited particles.
(d) The plasma glows with colour which does not depend upon nature of gas.

6. The colour of vapors formed on sublimation of iodine solid is
(a) Purple (violet) (b) Colorless (c) Yellow (d) Orange

7. Under which of the following conditions we can boil water at room temperature?
(a) At low pressure
(b) At high pressure
(c) At very high pressure
(d) At atmospheric pressure

8. Which of the following is not endothermic process?
(a) Fusion (b) Vaporization (c) Temperature (d) Insoluble heavy impurities

9. Which of the following does not affect rate of evaporation?
(a) Wind speed (b) Surface area (c) Temperature (d) Insoluble heavy impurities

10. Kinetic energy of molecules is directly proportional to
(a) Temperature (b) Pressure (c) Both (a) and (b) (d) Atmospheric pressure

11. A car with speed 72km/hr suddenly applies break. The brake has maximum ability to decelerate with $5m/s^2$. Find time taken to stop the car after applying brakes?
(a) 2sec (b) 3sec (c) 4sec (d) 5sec

12. Which of the following does not represent accelerated motion?
(a) A Car changing its speed per second by 2km/hr
(b) A man walking slowly with speed of 2km/hr in a straight line
(c) A car is moving on a circular track with uniform speed of 20km/hr
(d) Both (b) and (c)

13. Which of the following is not true for displacement?
(a) It cannot be zero
(b) Its magnitude is greater than the distance
(c) Its unit is cm
(d) Its magnitude can be equal to the distance

14. A man starts his journey and gains a velocity of 10m/s in 2s. Find its acceleration?
(a) $5ms^{-2}$
(b) $2ms^{-2}$
(c) $1ms^{-2}$
(d) $10ms^{-2}$

15. Area under a 'v-t' graph represents a physical quantity which has the unit
(a) m^2 (b) m (c) m^3 (d) ms^{-1}

16. Which of the following statement is *not* correct for an object moving along a straight path in an accelerated motion?
(a) Its speed keeps changing (b) Its velocity always changes
(c) It always goes away from the earth (d) A force is always acting on it

17. A goalkeeper in a game of football pulls his hands backwards after holding the ball shot at the goal. This enables the goal keeper to
(a) exert larger force on the ball (b) reduce the force exerted by the ball on hands
(c) increase the rate of change of momentum (d) decrease the rate of change of momentum

18. An object of mass 2 kg is sliding with a constant velocity of 4 m/s on a frictionless horizontal table. The force required to keep the object moving with the same velocity is
(a) 32 N (b) 0 N (c) 2 N (d) 8 N

19. The cell wall of plant is made of
(a) Cellulose (b) chitin (c) glycosaccharide (d) protein

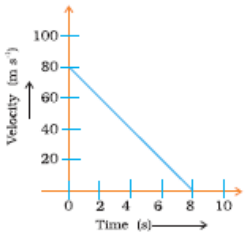
20. The cell membrane of vacuole is known as
(a) Cell wall (b) tonoplast (c) topoplast (d) critenae

21. The genetic material is known as
(a) chromosome (b) chromos (c) chromoplast (d) chromatide

22. The plastid that is present in leaves is
(a) Chloroplast (b) Chromoplast (c) leucoplast (d) chlorophyll

Section B

1. Camphor disappears without leaving any residue. Explain?
2. Why do we feel cool when we touch a piece of ice?
3. What is Latent Heat of Fusion? Define latent heat of Vaporization?
4. Two balls of the same size but of different materials, rubber and iron are kept on the smooth floor of a moving train. The brakes are applied suddenly to stop the train. Will the balls start rolling? If so, in which direction? Will they move with the same speed? Give reasons for your answer.
5. Two friends on roller-skates are standing 5 m apart facing each other. One of them throws a ball of 2 kg towards the other, who catches it, How will this activity affect the position of the two? Explain your answer.
6. Velocity versus time graph of a ball of mass 50 g rolling on a concrete floor is shown in Fig. Calculate the acceleration and frictional force of the floor on the ball.



7. Define eukaryotes.
8. Name the organelles which are absent in plant cell but present in animal cell.
9. Who discovered the nucleus?
10. Rose is red in colour due to presence of _____.
11. What is protoplasm?
12. Define chromosomes.
13. Explain Membrane Biogenesis.

Section C

1. A) How can you show that evaporation causes cooling?
B) After rains, the rain drops dry away easily- on a sunny day or on a cloudy day? Give reasons.
2. How can matter change its state?
3. Using second law of motion, derive the relation between force and acceleration. A bullet of 10 g strikes a sand-bag at a speed of 1000 m/s and gets embedded after travelling 5 cm. Calculate
(i) the resistive force exerted by the sand on the bullet
(ii) the time taken by the bullet to come to rest.
4. Derive the unit of force using the second law of motion. A force of 5 N produces an acceleration of 8 m s–2 on a mass *m1* and an acceleration of 24 m/s^2 on a mass *m2*. What acceleration would the same force provide if both the masses are tied together?
5. A car starts from rest and moves along *the x*-axis with constant acceleration 5 m/s^2 for 8 seconds. If it then continues with constant velocity, what distance will the car cover in 12 seconds since it started from the rest?
6. An object is dropped from rest at a height of 150 m and simultaneously another object is dropped from rest at a height 100 m. What is the difference in their heights after 2 s if both the objects drop with same accelerations? How does the difference in heights vary with time?
7. An object starting from rest travels 20 m in first 2 s and 160 m in next 4 s. What will be the velocity after 7 s from the start.
8. Write the difference between scalar and vectors.
9. Derive the Second law of motion.
10. Derive the law of conservation of momentum.
11. Define osmosis. Explain types of osmosis.
12. Differentiate between plant cell and animal cell.
13. Draw the labelled diagram of prokaryotic cell.
14. Describe the structure of golgi apparatus and write its function.
15. Differentiate between RER and SER on the basis of structure and functions.

Section D

1. Pressure and temperature determine the state of a substance. Explain this in detail.
2. Explain giving examples the various factors on which rate of evaporation depends.
3. i) What are the characteristics of matter?
ii) The smell of hot sizzling food reaches you several meters away, but to smell the cold food you have to go close. Why?
4. Derive the equation of motion using graphical analysis.
5. a) Explain meiosis and mitosis.
b) Explain the function of organelles that is larger in plant cell compared to animal cell.
6. a) Which organelle is called power house of the cell and why?
b) what is the significance of Plasma membrane.
7. a) Lysosomes are suicidal bags. Comment.
b) Who proposed cell theory.
c) write one similarity between mitochondria and plastids.