



Ranvijay Vashista
9F
29

DELHI PUBLIC SCHOOL DWARKA
MID TERM EXAMINATION [2024-2025]
SUB : GENERAL SCIENCE
CLASS : IX

Time : 3 Hrs.

M.M : 80

General Instructions:

1. This question paper comprises of 39 questions in five sections – A, B, C, D & E.
2. All questions are compulsory. However there are internal choices in some questions.
3. Section – A consists of 20 objective type question carrying 1 mark each.
4. Section – B consists of 6 very short questions carrying 2 marks each. Answer to these questions should be in the range of 30 to 50 words.
5. Section – C consists of 7 short answer type questions carrying 3 marks each. Answer to these questions should be in the range of 50 to 80 words.
6. Section – D consists of 3 long answer type questions carrying 5 marks each. Answer to these questions should be in the range of 80 to 120 words.
7. Section – E consists of 3 source - based / case based units of assessment of 4 marks each with sub parts.
8. Reading Time : 15 Minutes : Writing Time : 3 Hours.

SECTION – A

MULTIPLE CHOICE QUESTIONS

1. The order of compressibility of three states of matter is as follows- (1)
a) Gases > Liquid > Solid
b) Liquid > Gases > Solid
c) Solid > Gases > Liquid
d) Gases > Solid > Liquid
2. Burns due to steam at 100°C are severe as compared to water at the same temperature is due to – (1)
a) Latent heat of fusion
b) Boiling point
c) Melting point
d) Latent heat of vapourisation
3. When pressure is applied and temperature is decreased, carbon dioxide gas is converted to its solid form known as (1)
a) Dry carbon dioxide
b) Dry water
c) Dry ice
d) Dry air
4. Turn on a water tap. Try breaking the stream of water with your fingers. Which property of matter is the reason behind the stream of water remaining together ? (1)
a) Particles of matter are extremely small in size.
b) Particles have spaces between them.
c) Particles are in constant state of motion.
d) Particles are held together by forces of attraction.
5. A student is asked to make a homogeneous mixture. He is provided with the following substances.
A. Water B. Sand C. Starch D. Salt E. Chalk powder
Which two substances should the student mix to form a homogeneous mixture ? (1)

- i) A and B
- ii) C and D
- iii) B and E
- iv) A and D

6. The zig-zag motion of colloidal particles is known as (1)

- a) Tyndall Effect
- b) Diffusion
- c) Brownian Movement
- d) Osmosis

7. The colloidal solution where both the dispersed phase and dispersion medium are liquid is (1)

- a) Foam
- b) Emulsion
- c) Sol
- d) Gel

8. 'Cells come from pre existing cells'. This statement was given by (1)

- a) Schleiden
- b) Schwann
- c) Virchow
- d) Purkinje

9. Plasmolysis occur in plant cell when (1)

- a) It is kept in a hypertonic solution.
- b) It is kept in a hypotonic solution.
- c) When it is kept in an isotonic solution.
- d) When it is kept in distilled water.

10. Cristae refer to (1)

- a) Folds in the inner membrane of Mitochondria
- b) Folds in the inner membrane of Chloroplast
- c) Membrane System of Endoplasmic Reticulum.
- d) Parallel lamellae in Golgi Apparatus.

11. Cork is impermeable to water and air because (1)

- a) It is dead.
- b) It consists of highly packed cells.
- c) There is deposition of Suberin in its cells.
- d) It replaces epidermis hence plays a protective role.

12. A distinctive feature in land plants which help them to survive successfully in terrestrial habitat (1)

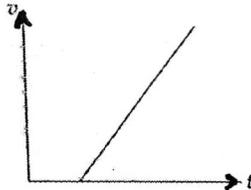
- a) presence of Meristematic tissue.
- b) Presence of Permanent tissues.
- c) Presence of Epidermis.
- d) Presence of Vascular tissue.

13. Which of the following statements is correct? (1)
- Inertia of a train is less than that of a car
 - Unit of Inertia is kgms^{-2}
 - Inertia of a stone is greater than that of a rubber ball of the same size.
 - Mass is a not a measure of inertia.

14. A person is hit harder when he jumps on a cemented floor than a muddy floor. Why? (1)

Force of attraction is less in mud

15. The velocity-time graph of a particle is shown in the following figure. Which of the following statements will describe the motion of the particle correctly? (1)



- The particle has a constant acceleration
 - The particle has zero displacement
 - The body is moving with a uniform velocity
 - The acceleration of the body is increasing
16. Two objects 'A' and 'B' of masses m_1 and m_2 are immersed in water. These masses are then kept in air at the same distance apart. How will the gravitational force between them change? (1)

No change

Question No. 17 to 20 are Assertion – Reasoning based questions:

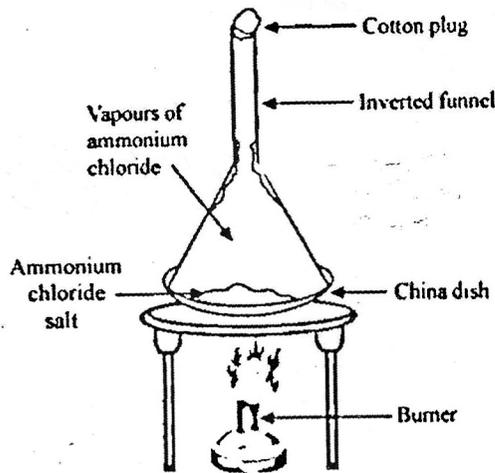
The following questions consist of two statements – Assertion (A) and Reason (R) . Answer these questions selecting the appropriate option given below.

- Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
 - Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
 - Assertion (A) is true but reason (R) is false.
 - Assertion (A) is false but reason (R) is true
- 17. Assertion (A):** Tyndall Effect is observed when sunlight passes through the canopy of a dense forest.
Reason (R): As in the forest, mist contains tiny droplets of water which acts as colloidal particles dispersed in air. (1)
- 18. Assertion (A):** Viruses do not show characteristics of life until they enter a living body.
Reason(R): Viruses lack any membranes. (1)
- 19. Assertion (A):** The growth of plants occur only in certain specific regions .
Reason(R): Meristematic tissue is located at specific regions in plant body . (1)
- 20. Assertion (A):** The gravitational force between two objects is 'F'. If masses of the two objects are halved without changing the distance between them, then the gravitational force would become 'F/4'.
Reason(R): Gravitational force is inversely proportional to the product of masses of the two objects. (1)

SECTION – B
VERY SHORT ANSWER QUESTIONS

21. Study the diagram given below and answer the following questions

(1+1)



- sublimation*
- a) Which process is depicted in the diagram? What happens when ammonium chloride vapours are cooled ?
- b) Give examples of two substances (other than ammonium chloride) which undergo this process.

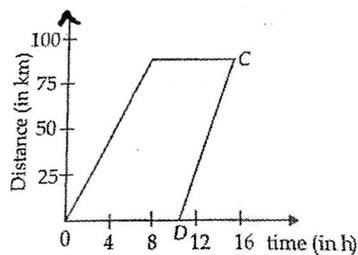
OR

Give reason-

- a) A gas fill completely the vessel in which it is kept.
- b) When sugar is dissolved in water, the volume of the solution does not change.
22. Identify the plant tissue: (2)
- a) Consist of relatively unspecialized cells with thin cell walls and presence of intercellular spaces.
- b) Permanent Tissue present in veins of leaves .
23. Why does Chromatin change into Chromosome when the cell begins to divide ? (2)
24. Why do plants have a lot of dead tissues present in them ? (2)
25. Draw displacement-time graphs to show difference between a body moving with uniform velocity and non-uniform velocity. (2)

OR

- a) Why is the following graph invalid?



- b) What does the slope of a v-t graph indicate?

6. Calculate the gravitational force between two objects each of mass 2 kg separated by a distance of 4m? (2)

SECTION – C
SHORT ANSWER QUESTIONS

27. Differentiate between the following- (2+1)
a) Colloids and Suspension (on the basis of stability and particle size)
b) Saturated and Unsaturated solution. (1 point of difference)
28. Riya tested the solubility of three different substances at different temperatures and collected the data as given below (results are given in the following table, as grams of substance dissolved in 100 grams of water to form a saturated solution). (2+1)

Substance Dissolved	Temperature in K			
	283	293	313	333
	Solubility			
KNO ₃	21	32	62	106
NaCl	36	36	36	37
KCl	35	35	40	46
NH ₄ Cl	24	37	41	55

- a) What mass of KCl would be needed to produce a saturated solution of KCl in 75 grams of water at 313 K?
b) Riya makes a saturated solution of KNO₃ in water at 333K and leave the solution to cool at room temperature. What would she observe as the solution cools?

OR

- a) Calculate the amount of water required to prepare 500g of 2.5 % solution of sugar by mass ?
b) Which of the following materials fall in the category of a pure substance ?
Air, Iron, Wood , HCl

29. Draw diagram of a plant cell and label two cytoplasmic-organelles present only in plant cells and absent in animal cells. (3)

OR

Name and Draw dead elements of Xylem.

30. A cell X when kept in a solution Y swells and bursts after some time. Identify X and Y. What causes the cell X to burst and not remain swollen? (3)
31. (a) How is the first law of motion contained in the second law? (1½+1½)
(b) A body of mass 500g is accelerated at 2 m/s². Find the accelerating force.
32. (a) A train starting from rest attains velocity of 108 km/h in 10 minutes. Assuming that the acceleration remains uniform, find the acceleration and distance traveled by the train to attain this velocity.
(b) Define the term 'Uniform acceleration' (2+1)
33. (a) Why is uniform circular motion said to be an accelerated motion? (3)
(b) Draw a diagram to show the direction of centripetal force and displacement for an object undergoing uniform circular motion.
(c) A girl ties a thread to a stone and whirls it around her head making the stone move in a circular path. In what direction will the stone move if the thread gets broken at any instant of time?

SECTION – D
LONG ANSWER QUESTIONS

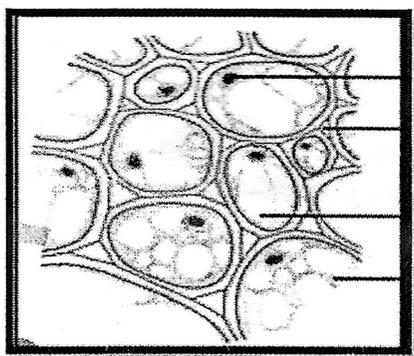
34. (a) A lit incense stick can be smelt in the other corner of a room but an unlit incense cannot be smelt from a distance. (2+1+2)
- Which property of matter can be related to the above example ?
 - Give an explanation for the above observation.
- (b) Is rusting of iron a chemical change. Justify.
- (c) Classify the following into element, compound and mixture
Sodium bi carbonate, Hydrogen, Calcium oxide, Soil.

OR

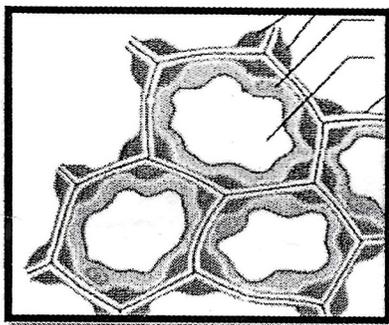
Answer the following questions-

(1+2+1+1)

- Why do we see water droplets on the outer surface of a glass containing ice cold water ?
 - Convert the following temperatures to.
 - 30⁰ C(Kelvin scale)
 - 450K (Celsius scale)
 - Name the state of matter that
 - Has definite mass, volume and shape.
 - Has minimum interparticle force of attraction
 - Evaporation is a surface phenomenon. Account for it.
35. a) Identify the tissues A and B and differentiate between them structurally (2 points). (3+1+1)



A



B

- Name any two eukaryotic unicellular organisms.
- Name the simple permanent plant tissue with lignin deposition.

OR

- Name and Differentiate between the conducting elements of Xylem and phloem
- Name the scientists who discovered dead and living cell .
- Name simple permanent plant tissue having air spaces in it .(Write the specific name)

36. (a) Is the following statement true or false. Justify.

The ratio of distance to displacement of a moving body is less than or equal to 1. (2+1+2)

- A car travels from 'A' to 'B' at a speed of 40 km/h and returns back to 'A' at a speed of 60km/h. What would its average velocity be?
- A ball of mass 10 g is initially moving with the velocity of 50m/s. On applying a constant force on the ball for 4s it acquires a velocity of 70 m/s. Calculate its rate of change of momentum.

SECTION - E
SOURCE BASED / CASE BASED QUESTIONS

37. Antoin Lavoisier, a French chemist defined an element as the basic form of the matter that cannot be broken down into simpler substances by chemical reaction. Elements can be divided into metals, non - metals and metalloids. A compound is a substance composed of two or more elements chemically combined with one another in a fixed ratio.

- a) Is element a pure substance? Justify *Pure (only 1 type of atom / molecule)* (1)
- b) Metals make a ringing sound when hit. What is this property known as? *Sonority* (1)
- c) Properties of compound are same as its constituent elements. (True / False) (1)
- d) Give example of two metalloids. (1)

OR

- d) Give example of two liquid elements. *Br & Hg*

38. Read the following passage and answer the questions.

Eukaryotes have membrane bound organelles present in them . Membrane keep chemical activities in various organelles well separated from each other. Prokaryotes do not have Membrane bound organelles. Various organelles perform different functions pertaining to various life processes.

- a) Name any two eukaryotic cells where most of the membrane bound organelles are absent. *Virus & Blue green* (1)
 - b) Name the membrane bound organelle which acts as cytoskeletal framework of the cell. *algal* (1)
 - c) Which two organelles are called semi autonomous. Why? *Plastid & Mitochondrion (own DNA)* (2)
- OR**
- c) How are Golgi Apparatus and Endoplasmic reticulum related functionally .

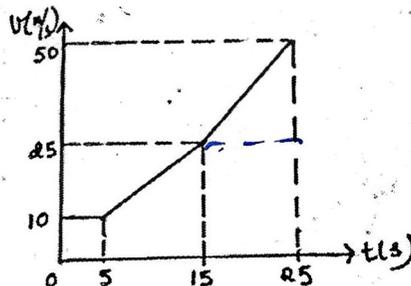
39. Newton's laws of motion account for every movement in the universe, from vibration of tiniest atoms to the movement of planets and stars. First law of motion is called law of inertia. Second law defines force quantitatively, and third law of motion gives an idea of action and reaction which are equal in magnitude and oppositely directed.

Based on this answer the following questions:

- a) Why do action -reaction not cancel each other? *No change in universe* (1)
- b) Why is it advisable to tie luggage kept on the roof of a car with a rope? *Inertia* (1)
- x) c) A force of 20N produces a change in momentum of 0.8 kg m/s. In what time is this change produced? (2)

OR

- d) The velocity time graph for motion of a motorcycle is shown below :
Find displacement of the motorcycle in the last 10 seconds.



375m