DELHI PUBLIC SCHOOL, JAMMU
SESSION- 2024-25
HALF YEARLY EXAMINATION
SAMPLE PAPER

CLASS-IX **M.MARKS-80**
SUBJECT –SCIENCE **TIME-3HRS**

General instructions:

1.This question paper consists of 39 questions in 5 sections.
2.All questions are compulsory. However, an internal choice is provided in some questions.
3.Section A consists of 20 objective type questions carrying 1 mark each.
4 .Section B consists of 6 Very Short questions carrying 02 marks each.
5.Section C consists of 7 Short Answer type questions carrying 03 marks each.
6.Section D consists of 3 Long Answer type questions carrying 05 marks each.
7.Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts.

SECTION-A

Q1. Swimming is possible by the: 1
(a)First law of motion (b) Second law of motion
(c) Third law of motion (d) Newton's law of gravitation

Q2. A passenger in a moving train tosses a coin that falls behind him. It means that the motion of the train is 1
(a)Uniform (b)Accelerated (c) Retarded (d)Along circular tracks

Q3. What would be the displacement of a particle moving in a circular path of radius r after a displacement of half a circle? 1
(a) 2πr (b) Πr (c) 2r (d)Zero

Q4. CO_2 can be easily liquefied and even solidified because 1
(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.

Q5.Which of the following has highest kinetic energy? 1
(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.

Q6. Kinetic energy of molecules is directly proportional to 1
(a)Temperature. (b)Pressure. (c)Both (a) and (b). (d)Atmospheric pressure.

Q7. Diamond is lustrous because 1
(a)It is colourless. (b)It is hard. (c)It is pure. (d)Its refractive index is high.

Q8. Boron' is an example of: 1
(a)Metal. (b)Non-Metal. (c)Metalloid. (d)Mixture.

Q9. The amount of solute dissolved in a given volume of the solvent is called 1
(a)The concentration of a solution. (b)The concentration of a solvent.
(c)The concentration of a solute. (d)None of the above.

Q10. A pure substance consists of a …… type of particle/particles 1
(a)Single. (b)Double. (c)Triple. (d)Half.

Q11.Which theory states that all living organisms are composed of cells? 1
(a)Theory of Inheritance. (b)Theory of Relativity.
(c) Cell Theory. (d)Theory of Evolution.

Q12..Which cell organelle is responsible for energy production in a cell? 1
(a)Nucleus. (b)Golgi apparatus. (c)Mitochondria. (d)Endoplasmic reticulum.

Q13.The function of ribosomes in a cell is to: 1
(a) Store (a)genetic information. (b)Control cell division.
(c)Synthesize proteins. (d)Store energy.

Q14. Which of the following is a feature of prokaryotic cells? 1
(a) Membrane-bound nucleus. (b) Complex organelles
(c)DNA enclosed in a nucleus. (d)Absence of membrane bound organelle.

Q15. What type of plant tissue is responsible for the transportation of water and nutrients throughout the plant? 1
(a)Epidermis. (b)Parenchyma. (c)Xylem. (d)Phloem.

Q16.Which plant tissue provides support and mechanical strength to young, growing parts the plant? 1
(a)Xylem. (b)Phloem. (c)Collenchyma. (d)Sclerenchyma. (e)Both c and d.

Q17 to Q20 are Assertion-and-Reason Type questions.

Each question consists of two statements, namely, Assertion (A) and Reason (R).For selecting the correct answer, use the following code:
(a) Both Assertion (A) and Reason (R) are the true and Reason (R) is a correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are the true but Reason (R) is not a correct explanation of Assertion (A).
(c) Assertion (A) is true and Reason (R) is false.
(d) Assertion (A) is false and Reason (R) is true.

Q17. Assertion : While walking on ice, one should take small steps to avoid slipping. 1
Reason : This is because smaller steps ensure smaller friction.

Q18. Assertion: Soft drink and soil are not pure substances.
Reason: Substance which is made up of less than two constituents is called mixture. 1

Q19. Assertion : Cell wall is a non-living part of the cell.
Reason : It offers protection, definite shape and support. 1

Q20. Assertion : Permanent tissue is composed of mature cells.
Reason : Meristematic tissue is a group of actively dividing cells. 1

SECTION-B

Q21. Define Uniform Circular motion with example. 2

Q22. Differentiate between balanced and unbalanced force. 2

OR

What type of motion is produced by unbalanced force and why?

Q23. Why do we wear seat belts while driving? 2

Q24 Why do we see water droplets on the outer surface of a glass containing ice cold water? 2

Q25. How does an amoeba obtain it's food? 2

Q26. Where do the lipids and proteins constituting the cell membrane get synthesized?

OR

What would happen to the life of a cell if there was no Golgi apparatus? 2

SECTION-C

Q27. A particle moving with an initial velocity of 5m/s is subjected to a uniform acceleration of 2.5m/s2. Find the displacement in the next 4 sec.? 3

Q28. Explain, why is it difficult for a fireman to hold a hose, which ejects large amounts of water at a high velocity. 3

Q29. With the help of an activity show that Ammonium chloride undergoes sublimation. 3

Q30. Give three points of difference between True solution, Colloidal and Suspension. 3

Q31. Differentiate between unicellular and multicellular organisms. 3

Q32. Explain the detailed structure of Eukaryotic cell.

Q33. Explain meristematic tissue with the help of diagram. 3

OR

Name the constituents of phloem. Give two functions of companion cells.

SECTION- D

Q34.i. Define Force. 5

ii. When a carpet is beaten with a stick, dust comes out of it. Explain.

OR

i.Define SI unit of force.

ii.If action is always equal to the reaction, explain how a horse can pull a cart.

Q35.(i) Distinguish between physical change and chemical change (3 points each) 5

(ii)Identify the dispersed phase and dispersing medium in the following colloids.

a. Fog

b. Cheese

OR

Iron filings and sulphur were mixed together and divided into two parts 'A' and 'S'. Part 'A' was heated strongly while Part 'S' was not heated. Dilute hydrochloric acid was added to both the parts and evolution of gas was seen in both the cases. How will you identify the gases evolved?

A solution of urea in water contains 16 grams of it in 120 grams of solution. Find out the mass percentage of the solution.

Q36.(i) Draw a well labelled diagram of prokaryotic cell. 5

(ii)Give two points of difference between SER and RER.

OR

Give five Points of difference between osmosis and diffusion.

SECTION E

Q37.One day Rahul decided to go his office by his car. He is enjoying the driving along with listening the old songs. His car is moving along a straight road at a steady speed. On a particular moment, he notices that the car travels 150 m in 5 seconds. (1+1+2)

(i) Define average speed . 1
(ii)What is the difference between Speed and velocity? 1
(iii)How far does it travel in 1 second ? 2

OR

How far does it travel in 6 seconds ?

Q38.In an experimental activity, crushed ice was taken in a beaker. A thermometer is fitted in such a way that its bulb was thoroughly surrounded by ice. The beaker is now slowly heated and temperature was regularly noted. Temperature rises gradually as the heating is continued and becomes constant when ice starts changing into liquid. Now answer the following questions:

(i)Where does the heat energy go when the temperature does not rise? 1
(ii)What is the role of thermometer in this experiment? 1
(iii)Define the term melting point. 2

OR

Define the term Latent heat of fusion.

Q39.Meristematic tissue is responsible for the growth of a plant. It contains undifferentiated cells that continuously divide, allowing the plant to increase in size. These cells are found primarily at the tips of roots and shoots, as well as in the cambium, which is responsible for the thickening of stems and roots. Meristematic tissue is crucial for plant development and repair.

(i)Which of the following is an example of meristematic tissue? (1+1+2=4) .
(a)Epidermis (b)Xylem (c)Phloem (d)Apical meristem

(ii)Meristematic tissues are responsible for:
(a). Food storage (b)Water absorption (c)Plant growth and development (d)Transport of nutrients

(iii)Which of the following is NOT a location of meristematic tissues in plants?
(a).Root tips (b)Stem tips (c).Leaf veins (d).Cambium

OR

Meristematic tissues are characterized by

(a).Large vacuoles (b)Thin cell walls (c)Storage of water (d)Thick cuticles