DAV BORL PUBLIC SCHOOL, BINA
HALF-YEARLY Examination Session (2024-25)
Practice Paper
Class IX SCIENCE

Time Allowed: 3 HOURS. **Maximum Marks: 80**

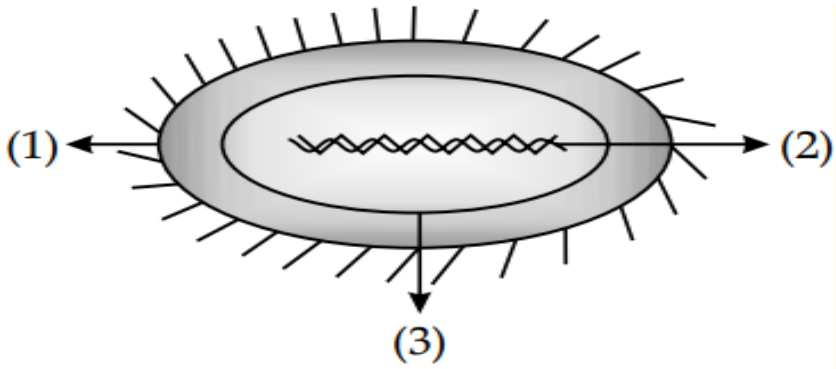
General Instructions:

1. All questions are compulsory
2. Question numbers 1 to 12 are of one mark questions.
3. Question numbers 13 to 14 are of four mark questions based on case study.
4. Question numbers 15 to 24 are three marks questions. These are to be answered in about 50 words each
5. Question numbers 25 to 30 are five marks questions. These are to be answered in about 70 words each.

1.	If the displacement of an object is proportional to square of time, then the object moves with a) uniform velocity b) uniform acceleration c) increasing acceleration d) decreasing acceleration	1
2.	According to the third law of motion, action and reaction a) always act on the same body b) always act on different bodies in opposite directions c) have same magnitude and directions d) act on either body at normal to each other	1
3.	The inertia of an object tends to cause the object a) to increase its speed b) to decrease its speed c) to resist any change in its state of motion d) to decelerate due to friction	1
4.	Area under a v – t graph represents a physical quantity which has the unit a) m^2 b) m c) m^3 d) m s^{-1}	1

5.	Which of the following will show tyndall effect? Why? a. salt solution b. Milk c. copper sulphate solution d. starch solution	1
6.	Two chemical species X and Y combine together to form a product P which contains both X and Y $X + Y \rightarrow P$ X and Y cannot be broken down into simpler substances by simple chemical reactions. Which of the following concerning the species X, Y and P are correct? (i) P is a compound(ii) X and Y are compounds (iii) X and Y are elements(iv) P has a fixed composition (a) (i), (ii) and (iii),(b) (i), (ii) and (iv)(c) (ii), (iii) and (iv)(d) (i), (iii) and (iv)	1
7.	A mixture of Sulphur and carbon disulphide is (a) heterogeneous and shows Tyndall effect (b) homogeneous and shows Tyndall effect (c) heterogeneous and does not show Tyndall effect (d) homogeneous and does not show Tyndall effect	1
8.	The property to flow is unique to fluids. Which one of the following statements is correct? (a) Only gases behave like fluids (b) Gases and solids behave like fluids (c) Gases and liquids behave like fluids (d) Only liquids are fluids	1
9.	**Directions:** In the following questions, a statement of assertion is followed by a statement of reason. Mark the correct choice as: (a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion. (b) If both Assertion and Reason are true but Reason is not the correct explanation of Assertion. (c) If Assertion is true but Reason is false. (d) If both Assertion and Reason are false. Assertion: Rudolf Virchow modified the hypothesis of cell theory given by Schleiden and Schwann. Reason : Cell theory says that all cells arise from pre-existing cells.	1
10	**Assertion:** Vascular or conductive tissue is a distinctive feature of complex plants.	1

	Reason : Vascular tissue has made survival of complex plants possible in terrestrial environment.	
11	Evaporation of a liquid at room temperature leads to a——— effect.	1
12	The arrangement of particles is less ordered in the ——— state. However, there is no order in the ——— state.	1
13	Any change in the velocity of an object results in an acceleration: increasing speed (what people usually mean when they say acceleration), decreasing speed, or changing direction. Yes, that's right, a change in the direction of motion results in an acceleration even if the moving object neither speed up nor slowed down. That's because acceleration depends on the change in velocity and velocity is a vector quantity with both magnitude and direction. Thus, a falling apple accelerates, a car stopping at a traffic light accelerates, and the moon in orbit around the Earth accelerates. Acceleration occurs anytime an object's speed increases or decreases, or it changes direction. 1. Acceleration can be defined as rate of change of: a. displacement b. velocity c. momentum d. inertia 2. Acceleration is a vector quantity which indicates that its value: a. can be positive, negative or zero b. is always positive c. is always negative d. is zero 3. A falling apple accelerates: a. negatively and uniformly b. positively and uniformly c. positively and non-uniformly d. negatively and non-uniformly 4. Moon orbiting around the earth because of: a. zero acceleration b. centripetal acceleration c. neutral acceleration. d. centrifugal acceleration	4

14	Study the given diagram of bacterial cell and answer any four questions from (i) to (v).  Study the given diagram of bacterial cell and answer any four questions from (i) to (v) (i) Label the parts marked 1, 2, and 3. (a) 1- Nucleus, 2-Cell wall, 3- Plasma membrane. (b) 1-Cell wall, 2- Nucleoid, 3- Plasma membrane. (c) 1- Cytoplasm ,2- Nucleus, 3- Cell wall. (d) 1- Nucleus, 2-Cytoplasm, 3- Cell wall. (ii) Which structure present in the region 2 of a living cell bear genes? (a) Chromosome (b) Plasma membrane (c) Cytoplasm (d) Cell wall (iii) How nuclear region of a bacterial cell and nuclear region of an animal cell is different from each other? (a) Nuclear region of bacterial cell is well defined but lacks any covering while nuclear region of an animal cell is poorly defined and membrane bound.(b) Nuclear region of bacterial cell is poorly defined and has a covering while nuclear region of an animal cell is poorly defined and membrane bound. (c) Nuclear region of bacterial cell is poorly defined and lacks any covering while nuclear region of an animal cell is well defined and membrane bound. (d) Nuclear region of bacterial cell is poorly defined and lack any covering while nuclear region of an animal cell is well defined and membrane bound. An example of single celled organism is : (a) Bird (b) Fish (c) Snake	4

	(d) Amoeba Which structure present in the region 2 of a living cell bear genes? (a) Chromosome (b) Plasma membrane (c) Cytoplasm (d) Cell wall	
15	A car having mass 700 kg is moving at a speed of 90 km/h. On applying brakes, its speed is reduced to 36 km/h in 10 s. Calculate the force applied by the brakes.	3
16	During arm wrestling, participants put their arms on the table, and wrestle with the palms. If the force exerted by both the players is equal, a) Where are balanced forces acting? b) Where is the action reaction pair acting?	3
17	Define uniform circular motion. A racer is moving with a constant tangential speed of 50 m/s, takes one lap around a circular track in 40 seconds. Calculate the magnitude of the displacement of the car after 2 minutes 20sec.	3
18	Comment on the following statements: (a) Evaporation produces cooling. (b) Rate of evaporation of an aqueous solution decreases with increase in humidity. (c) Sponge though compressible is a solid.	3
19	Why does the temperature of a substance remain constant during its melting point or boiling point?	3
20	Differentiate between solution suspension and colloids on the basis of following :- 1.Stability 2. Transperency 3.Tyndall effect 4.Particle size 5.Filtration Property	3
21	What would you observe when (a) a saturated solution of potassium chloride prepared at 60°C is allowed to cool to room temperature. (b) an aqueous sugar solution is heated to dryness. (c) a mixture of iron filings and sulphur powder is heated strongly.	3
22	The teacher instructed three students 'A', 'B' and 'C' respectively to prepare a 50% (mass by volume) solution of sodium hydroxide (NaOH). 'A' dissolved	3

	50g of NaOH in 100 mL of water, 'B' dissolved 50g of NaOH in 100g of water while 'C' dissolved 50g of NaOH in water to make 100 mL of solution. Which one of them has made the desired solution and why? **OR** (a) Name two properties of a substance to check its purity? (b) Alloys cannot be separated by physical means, though it is considered mixture, Why?	
23	Differentiate between Evaporation and Boiling (Any three points) **OR** Why steam causes more severe burn as compared to boiling water?	3
24	Give names of any two organisms associated with following. a)Bee keeping b) Cattle farming c) Kharif crop d) Weeds Marine fish e)Shell fish f) Indegenous cattle g) Exotic varieties of cattle.	3
25	a) Mention the two precautions to determine the boiling point of water in laboratory. b) A mixture of sand, powdered glass and common salt is dissolved in water and then filtered. Name the substance left on filter paper. Name the substance in the filtrate. c) Explain how both physical and chemical changes take place during the burning of a candle.	5
26	a) Ball is thrown upward with a velocity of 20 ms^{-1}. Calculate the maximum height attained, net displacement and total distance covered by the ball (g=10 ms^{-2}) b) Differentiate between uniform and non-uniform acceleration.	5
27	a) State the law of motion. b) What is the impulse and write two applications in sports?	5
28	(a) List any four properties of a colloid and mention any two properties in which colloids differ from suspension. (b) State what is Tyndall effect? Which of the following solutions will show Tyndall effect? Starch solution, sodium chloride solution, Tincture iodine, air **OR** (a) What happens to sugar when it is dissolved in water? What information do you get about the nature of matter from the dissolution of sugar in water? (b) Why does diffusion occur more quickly in a gas than a liquid?	5

	(c) What is Brownian motion? Write the characteristics of matter is demonstrated by Brownian motion?	
29	a) Draw a well labeled diagram of the functional unit of your nervous system and explain the function of any two parts. b) i) Write a short note on apiculture. ii)Explain composite fishery.	5
30	Answer the following questions in brief: a) Role of parenchyma b) Lateral meristematic tissue c) Crop Rotation d) Green manuring e) Indegenous species	5