Navodaya Vidyalaya Samiti

Term-I Examination 2025-26

Subject : Science

Class – IX (2025-26)

Max. Marks: 80 **Time Allowed: 3 hours**

General Instructions:

i. *This question paper consists of 39 questions in 3 sections.*
Section A is Biology, Section B is Chemistry and Section C is Physics.

ii. *All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.*

	Section – A (30 Marks)	
1.	Which of the following is known as the "powerhouse of the cell"? (LO -2) a) Nucleus b) Mitochondria c) Ribosome d) Endoplasmic Reticulum	**1**
2.	Who discovered the cell? (LO -2) a) Robert Hooke b) Robert Brown c) Anton van Leeuwenhoek d) Matthias Schleiden	**1**
3.	Which cell organelle is responsible for protein synthesis? (LO -2) a) Lysosome b) Ribosome c) Golgi Apparatus d) Vacuole	**1**
4.	Which of the following is a unicellular organism? (LO -4) a) Human b) Amoeba c) Mango tree d) Earthworm	**1**
5.	Which type of tissue provides mechanical support to plants? (LO -2) a) Parenchyma b) Collenchyma c) Sclerenchyma d) Xylem	**1**
6.	The process of cell division in prokaryotes is called: (LO -3) a) Mitosis b) Meiosis c) Binary fission d) Cytokinesis	**1**

7.	Which tissue is responsible for the transport of water in plants? (LO -2) a) Phloem b) Xylem c) Parenchyma d) Meristematic tissue	**1**
The following question consists of two statements- Assertion A and reason R. Answer these questions by selecting the appropriate option given below: (LO -4,5) a) Both (A) and (R) are true and (R) is the correct explanation of (A) b) Both (A) and (R) are true and (R) is not the correct explanation of (A) c) (A) is true but (R) is false d) (A) is false but (R) is true		
8.	Assertion (A): The cell is basic structural and functional unit of life in all living. Reason (R): All living organism are made up of cells and cells performs all the necessary function for life.	**1**
9.	Assertion (A): Permanent tissues in plants have cells that do not divide further after differentiation. Reason (R): Permanent tissues are formed from meristematic tissue and their cells are specialised to perform specific functions.	**1**
10.	What is the difference between prokaryotic and eukaryotic cells? (LO -3)	**2**
11.	Attempt either subpart A or B. (LO -4) A- Explain the role of the cell membrane in a cell. **OR** B- Differentiate between parenchyma and collenchyma tissues in plants	**2**
12.	What are meristematic tissues? Give one example. (LO -4)	**2**
13.	Describe the structure and function of the nucleus in a cell. (LO -2)	**3**
14.	Explain the types of permanent tissues in plants with one function of each. (LO -3)	**3**
15.	Rohan found weakness in his body. He consults the doctor. Doctor diagnosis him and advised him to take balanced diet and do exercise. Answer the following questions on the basis of above case- Attempt either subpart A or B. A- Discuss the structure and functions of mitochondria in a cell. (LO -3) **OR** B- Explain the types of animal tissues and their roles in the body. (LO -2)	**4**
16.	Attempt either subpart A or B. A- Describe the process of cell division in animal cells (mitosis) and its significance. **OR** B- Draw the labelled diagram of the plant cell. And give three differences between plant cell and animal cell. (LO -5)	**5**

	Section – B (25 Marks)	
17.	Which of the following is a physical change? (LO -2) a) Rusting of iron b) Burning of paper c) Melting of ice d) Cooking of food	1
18.	A mixture of sulphur and carbon disulphide is: (LO -2) a) Homogeneous and shows Tyndall effect b) Heterogeneous and shows Tyndall effect c) Homogeneous and does not show Tyndall effect d) Heterogeneous and does not show Tyndall effect	1
19.	The smallest unit of an element that retains its chemical properties is: (LO -2) a) A molecule b) An atom c) A compound d) A mixture	1
20.	Which of the following is a characteristic of a true solution? (LO -2) a) Particles are visible under a microscope b) It scatters light c) Particles settle down over time d) Particles are not visible to the naked eye	1
21.	During evaporation, the particles of a liquid: (LO -2) a) Gain energy and move faster. b) Lose energy and move slower. c) Form a solid lattice. d) Combine to form a gas.	1
22.	Consider the following statements about particles of matter: (LO -3) I. Particles of matter are very small. II. Particles of matter are stationary. III. Particles of matter attract each other. Which of the above statements is/are correct? a) I and II only b) I and III only c) II and III only d) I, II, and III	1
23.	Which pair correctly represents a physical property and a chemical property of matter respectively? (LO -2) a) Density, Flammability b) Reactivity, Boiling Point c) Color, Mass d) Malleability, Acidity	1

24.	The following question consists of two statements- Assertion(A) and reason (R). Answer these questions by selecting the appropriate option given below: (LO -4) a) Both (A) and (R) are true and (R) is the correct explanation of (A) b) Both (A) and (R) are true and (R) is not the correct explanation of (A) c) (A) is true but (R) is false d) (A) is false but (R) is true Assertion (A): . Increasing pressure can liquefy gases. Reason (R): Solid CO2 (dry ice) melts into liquid CO2 at atmospheric pressure.	1
25.	Define evaporation and explain how it is influenced by temperature. (LO -5)	2
26.	Differentiate between a mixture and a compound with two points for each. Give one example of each. (LO -3) ***OR*** Write the steps you would use for making tea. Use the words solution, solvent, solute, dissolve, insoluble, filtrate, and residue. (LO -3)	3
27.	Rohit is making food in kitchen. While making dal, he slows the temperature by rotating knob of gas burner of stove. He observed that boiling of water continuously occurs despite of lowering the temperature. (LO -4) On the basis of above case answer the following- A- Why water continuously boiling after lowering the temperature. B- What is Latent heat of vaporization C- Define the term sublimation.	3
28.	After a heavy rain, a group of students collected a sample of water from a nearby puddle. They observed that the water was cloudy and had some fine particles suspended in it. When they left the sample undisturbed for an hour, they noticed that some of the particles settled at the bottom of the container. When they tried to pass a beam of light through the sample, the path of light was visible. *A.* What type of mixture is the puddle water sample (solution, suspension, or colloid)? Give reasons for your answer based on the observations. *B.* What would happen to the visibility of the light beam if the students filtered the sample and then passed the light through the filtrate? ***Attempt either subpart C or D.*** *C.* Is the puddle water a pure substance or a mixture? Explain. (LO -3) **OR** *D.* How could the students separate the suspended particles from the water?	4
29.	***Attempt either subpart A or B.*** A- Explain the differences between solids, liquids, and gases in terms of particle arrangement and movement. (LO -5) **OR** B- Which separation techniques will you apply for the separation of the following? 1. Sodium chloride from its solution in water 2. Ammonium chloride from a mixture containing sodium chloride and ammonium chloride 3. Small pieces of metal in the engine oil of a car	5

	4. Different pigments from an extract of flower petals 5. Butter from curd 6. Iron pins from sand	
	Section – C (25 Marks)	
30.	A body of mass 20 kg is accelerating at a rate of 0.25 ms^{-2}. The force acting on the body is (LO -2) a) 5 N b) 10 N c)20 N d) 50 N	1
31.	Which of the following quantities can be obtained from the slop of velocity time graph? (LO -2) a) Distance b) displacement c) Velocity d) Acceleration	1
32.	The following question consists of two statements- Assertion A and reason R. Answer these questions by selecting the appropriate option given below: (LO -4) a) Both (A) and ® are true and ® is the correct explanation of (A) b) Both (A) and ® are true and ® is not the correct explanation of (A) c) (A) is true but ® is false d) (A) is false but ® is true Assertion (A): Momentum is a scalar quantity. Reason ®: Momentum is the product of mas and velocity.	1
33.	Usha swims in a 90 m long pool. She covers 180 m in 1 minute by swimming from one end to other end and back along the same straight path. Find the average speed and average velocity of Usha. (LO -4)	2
34.	Attempt either option A or B (LO -3) A-When a carpet is beaten with a stick, dust comes out of it, explain. **OR** B- Why is it advised to tie any luggage kept on the roof of a bus with a rope.(LO -2)	2
35.	Which would require a greater force – accelerating a 2 kg mass at 5 ms^{-2} or a 4 kg mass at 2 ms^{-2}. (LO -3)	3
36.	(1) State Newton's second law of motion. Show mathematical formulation of second law of motion. (LO -6) (2) Discuss an activity to describe Newton's third law. (LO -7)	3
37.	(1) State Universal law of gravitation. Write the formula to find the magnitude of gravitational force between the earth and an object on the surface of earth. (2) Write any two differences between distance and displacement. (LO -3,4)	3

38.	Uniform circular motion occurs when an object moves in a circular path at a constant speed. In this type of motion, the object velocity is constantly changing due to direction of its motion, but its speed remain constant. The acceleration in uniform circular motion is directed towards the centre of circle and is called centripetal acceleration. Understanding uniform circular motion involves grasping, how velocity, speed and acceleration interact within this specific movement pattern. (A) Name the physical quantity that remain constant during uniform circular motion. (B) Define centripetal acceleration. Attempt either subpart C or D (C) Draw circular motion and mark the direction of velocity at four different points. OR (D) Give an example of uniform circular motion. (LO -2,4,5,6)	4
39.	Attempt either option A or B (LO -3,6) A- Abdul while driving to school, computes an average speed for his trip to be 20 km/h. On his return trip along the same route, there is less traffic and the average speed is 30 km/h. What is the average speed of Abdul's trip.? OR B- A motorboat starting from rest on a lake accelerates in a straight line at a constant rate of $3ms^{-2}$ for 8 second. How far does the boat travel during this time.	5

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