Directorate of Education, GNCT of Delhi
Annual Examination Practice Paper (Session: 2025-26)
Class:IX ; Subject: SCIENCE (086)

Maximum Marks: 80 **Duration: 3 hours**

General Instructions:
1. This question paper consists of 39 questions in 3 sections. Section A is Biology, Section B is Chemistry, and Section C is Physics.
2. All sections are compulsory. However internal choice is provided in some questions. A student is expected to attempt only one of these questions.

Section A		
Q.No.	**Question**	**Marks**
1.	**Which of the following cell organelles is responsible for protein synthesis?** **A) Ribosomes** **B) Lysosomes** **C) Nucleus** **D) Vacuole**	**1**
2.	**Blood is called a connective tissue because—** **A) It connects body parts** **B) It helps in transportation of materials** **C) It has fluid matrix and connects different organs functionally** **D) It has fibers**	**1**
3.	**Cork cells are impervious to gases due to the presence of—** **A) Lignin** **B) Suberin** **C) Cutin** **D) Pectin**	**1**
4.	**The main water-conducting elements of xylem are—** **A) Sieve tubes and companion cells** **B) Vessels and tracheids** **C) Parenchyma and sclerenchyma** **D) Collenchyma and xylem fibres**	**1**
5.	**Which of the following is a biotic factor affecting crop yield?** **A) Rainfall** **B) Temperature** **C) Weeds** **D) Soil pH**	**1**

6.	**Which among the following is an example of green manure?** **A) Urea** **B) Guar** **C) Cow dung** **D) Compost**	**1**
7.	**What is the main objective of animal husbandry?** **A) Increasing human population** **B) Increasing production of animal-based food** **C) Plant breeding** **D) Forest management**	**1**
8.	**The following question 8 consists of two statements -Assertion (A) and Reason (R). Answer this question by selecting the appropriate option given below :** **A. Both A and Reason R are true, and R is the correct explanation of A.** **B. Both A and R are true, but 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): Diffusion and osmosis are similar processes.** **Reason (R): Both involve movement of molecules from higher to lower concentration.**	**1**
9.	**<u>Attempt either option A or B.</u>** **A. A plant cell and an animal cell were observed under a microscope. List two features to identify which one is a plant cell.** **OR** **B. A cell was observed under a microscope and found to have no defined nucleus or membrane-bound organelles.** **(i) Name the type of cell.** **(ii) Give one example of an organism with such cells.**	**2**
10.	**What happens when an animal cell and a plant cell are placed in:** **(a) Hypotonic solution** **(b) Hypertonic solution** **(c) Isotonic solution**	**3**
11.	**Describe the structure of a neuron and state its function.**	**3**
12.	**Explain three ways to improve the quality of milk production in cattle.**	**3**

13.	**A banana plant can stand upright even though it has a soft stem. A tree like mango, on the other hand, has a strong woody stem that provides great mechanical support. Both, however, are able to transport water and nutrients efficiently.** **A. Which tissue provides mechanical support to banana stem?** **B. Name the conducting tissue that carries water.** **<u>Attempt either option C or D.</u>** **C. State any two functions of epidermis in plants.** **OR** **D. Name the four type of elements of Phloem tissue.**	**4**
14.	**<u>Attempt either option A or B.</u>** **A. State one function of the following cell organelles:** **(i) Nucleus** **(ii) Mitochondria** **(iii) Golgi apparatus** **(iv) Lysosomes** **(v) Endoplasmic reticulum** **OR** **B. List five major differences between prokaryotic and eukaryotic cell.**	**5**
	Section B	
15.	**Which of the following is not a property of solids?** **A) Definite shape** **B) Incompressibility** **C) Definite volume** **D) High rate of diffusion**	**1**
16.	**What type of mixture is blood?** **A) True solution** **B) Suspension** **C) Colloid** **D) Compound**	**1**
17.	**The molecular mass of CO_2 is:** **A) 22 u** **B) 28 u** **C) 44 u** **D) 32 u**	**1**

18.	**The following question 18 consists of two statements -Assertion (A) and Reason (R). Answer this question by selecting the appropriate option given below :** **A. Both A and Reason R are true, and R is the correct explanation of A.** **B. Both A and R are true, but 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): Electrons revolve around the nucleus in discrete orbits.** **Reason (R): Electrons lose energy continuously while revolving around the nucleus.**	**1**
19.	**State two differences between Evaporation and Boiling.**	**2**
20.	**Write one difference between physical and chemical change with example.**	**2**
21.	**What is the octet rule? Name one element that follows it.**	**2**
22.	**<u>Attempt either option A or B.</u>** **A. What are Isotopes and Isobars? Write two applications of Isotopes.** **OR** **B. An element 'X' has Mass number 27 and the number of neutrons is 14.** **(i) Find the Atomic number of X.** **(ii) Write the Electronic configuration of X.** **(iii) Identify the element X.**	**3**
23.	**Give reasons:** **(a) Tap water is not a pure substance.** **(b) Milk is a colloid.** **(c) Solution is stable in nature whereas Suspension is unstable.**	**3**

24.	**A water bottle wrapped in a wet cloth is kept under a moving fan. After some time, the water inside the bottle becomes cool. The process involved here is similar to that which helps in cooling earthen pots and desert coolers.** **A. Which phenomenon is responsible for cooling of water in earthen pots ?** **B. Why does a cooler not work effectively on humid days?** **<u>Attempt either option C or D.</u>** **C. List any two factors that increase the rate of evaporation.** **OR** **D. State any two characteristics of particles of matter.**	**4**
25.	**<u>Attempt either option A or B.</u>** **A. State any five postulates of Dalton's atomic theory.** **OR** **B. Define the following :** **(i) Atomic Mass unit** **(ii) Molecule** **(iii) Polyatomic ion** **(iv) Valency** **(v) Law of Constant Proportions**	**5**
	Section C	
26.	**A car accelerates from 36 km/h to 72 km/h in 10 seconds. Its acceleration is —** **A) 1 m/s²** **B) 2 m/s²** **C) 5 m/s²** **D) 10 m/s²**	**1**
27.	**In a velocity–time graph, the area enclosed between the graph and the time axis represents —** **A) Acceleration** **B) Velocity** **C) Distance or displacement** **D) Rate of change of acceleration**	**1**
28.	**If the momentum of a body is doubled while its mass remains constant, its velocity becomes —** **A) Half** **B) Double** **C) Four times** **D) Remains same**	**1**

29.	**When a ball falls freely from a height, the total mechanical energy** **A) Increases** **B) Decreases** **C) Remains constant** **D) Becomes zero**	**1**
30.	**When temperature increases, the speed of sound in air** **A) Increases** **B) Decreases** **C) Remains constant** **D) Becomes zero**	**1**
31.	**Which of the following waves requires a medium for propagation?** **A) Light waves** **B) Radio waves** **C) Sound waves** **D) X-rays**	**1**
32.	**The following question 32 consists of two statements -Assertion (A) and Reason (R). Answer these questions by selecting the appropriate option given below :** **A. Both A and Reason R are true, and R is the correct explanation of A.** **B. Both A and R are true, but 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): The weight of an object is less at the equator than at the poles.** **Reason (R): The value of acceleration due to gravity is less at the equator than at the poles.**	**1**

33.	**The following question 33 consists of two statements -Assertion (A) and Reason (R). Answer these questions by selecting the appropriate option given below :** **A. Both A and Reason R are true, and R is the correct explanation of A.** **B. Both A and R are true, but 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): Ultrasounds are high frequency waves.** **Reason (R): Ultrasonic waves can detect very small obstacles due to their short wavelength.**	**1**
34.	**Define buoyant force. On what factors does it depend?**	**2**
35.	**<u>Attempt either option A or B.</u>** **A. A sound wave has a frequency of 256 Hz and wavelength of 1.3 m. Calculate its speed.** **OR** **C. List two uses of multiple reflection of sound.**	**2**
36.	**What does the slope of a distance–time graph represent? How can we identify uniform and non-uniform motion from it?**	**3**
37.	**State Archimedes' Principle. Mention its two applications.**	**3**
38.	**A cricket player catches a fast-moving ball by pulling his hands backward while catching it. If he tries to stop the ball suddenly without moving his hands back, he may hurt his palms. The force applied on the ball brings it to rest, and by increasing the time duration of stopping the ball, the impact force is reduced.** **A. Define Momentum.** **B. Name the law of motion which is demonstrated in this situation.** **<u>Attempt either option C or D.</u>** **C. A ball of mass 0.5 kg is moving with a speed of 10 m/s. It is stopped by a player in 0.2 s. Find the average force applied by the player.** **OR** **D. A body of mass 3 kg moves with a velocity 4 m/s. Calculate its momentum.**	**4**

39.	**<u>Attempt either option A or B.</u>** **A. (i) Define 1 Joule of work.** **(ii) Write an expression for the kinetic energy of an object.** **(iii) State the law of conservation of energy.** **(iv) Define Power and write its SI unit.** **(v) What are the necessary conditions for Work ?** **OR** **B. (i) A man lifts a bag of 20 kg from the ground and put it on his head 2 m above the ground. Calculate the work done by him on the bag.** **(ii) On what factor does the kinetic energy of a body depends ?** **(iii) Find the energy possessed by an object of mass 20 kg when it is at a height of 15 m above the ground. Given g= 9.8 m/s2**	**5**