

DAV PUBLIC SCHOOLS, DELHI NCR
SAMPLE PAPER MID TERM EXAMINATION -2026-27
CLASS - VIII
SUBJECT: SCIENCE

Time: 3 hr

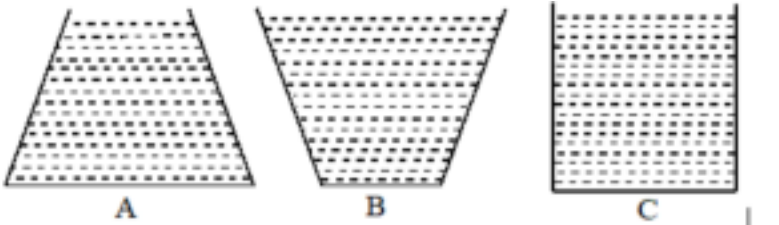
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General Instructions:

1. The question paper comprises five sections A, B, C, D and E. There are 39 questions in the question paper. All questions are compulsory.
2. There will be no overall choice in the question paper, but there will be an internal choice in 1 question of Section B, 1 question of Section C and 3 questions of Section D. Each case-based question in Section E contains five sub-parts of 1 mark each, out of which only four are to be attempted.
3. Section-A consists of 20 objective type questions (Q. No. 1 to 20), carrying 1 mark each. These questions are MCQs and Assertion- Reason questions.
4. Section-B consists of 6 very short questions (Q. No. 21-26), carrying 2 marks each.
5. Section-C consists of 7 short answer type questions (Q. No. 27-33) carrying 3 marks each.
6. Section-D (question number 34-36) consists of 3 long answer type questions carrying 5 marks each.
7. Section-E (question numbers 37-39) consists of 3 source-based/case- based units of assessment of 4 marks each with sub-parts.

	Section-A (Select and write the most appropriate option out of the four options given for each of the questions 1-20).	
1.	Consider the following statements: 1.Plant cells generally have a cell wall. 2.Animal cells generally have chloroplasts. 3.Plant cells usually contain a large central vacuole. 4.Both plant and animal cells have a cell membrane. Which statements are correct? A) 1, 2 and 3 B) 1, 3 and 4 C) 2 and 4 only D) 1 and 2 only	(1)
2.	Unlike bacteria or fungi, viruses cannot multiply independently. Their reproduction begins only under specific conditions. Identify the correct environment where viruses can reproduce: A) Preserved in crystalline form within jars B) Inside the body of a living host C) Mixed with nutrient-rich soil D) Suspended in plain water without a host	(1)

3.	If the cell membrane of a cell becomes completely non-selective, which function would be most directly affected? A) Control over movement of substances into and out of the cell B) Production of food in chloroplasts C) Storage of genetic information D) Release of energy from food	(1)
4.	A student says, "If the area of contact is doubled while the force remains unchanged, pressure will also double." Which evaluation is correct? A) Correct, because pressure increases with area B) Correct, because force and area are directly proportional C) Incorrect, because pressure decreases when area increases D) Incorrect, because pressure is independent of area	(1)
5.	Petroleum is often called "black gold" because: A) It is viscous, dark in color and highly valuable B) It is used to make ornaments C) It is found only in deserts D) It is used as currency	(1)
6.	Which sequence correctly represents the formation of a polymer? A) Polymer → monomers → polymerisation B) Monomers → polymerisation → polymer C) Monomers → polymer → polymerisation D) Polymerisation → monomers → polymer	(1)
7.	Consider the following statements: I. Viruses can reproduce independently outside a living cell. II. Bacteria can be useful in making curd. III. Some microorganisms cause diseases. Which statements are correct? A) I and II only B) II and III only C) I and III only D) I, II and III	(1)
8.	A boy pushes a stationary box with a force of 50 N, but the box does not move. Which statement is most appropriate? A) No force acts on the box. B) The applied force is completely absent. C) Frictional force balances the applied force. D) The box has no weight.	(1)

9	Four statements about combustion are given: P: A fuel must reach its ignition temperature. Q: Oxygen is necessary for ordinary combustion. R: More fuel always means a higher flame temperature. S: Complete combustion generally releases more useful energy than incomplete combustion. Which combination is correct? A) P, Q and S B) P and R only C) Q and R only D) P, Q, R and S	(1)
10	Consider the following statements: 1. Rayon is obtained by chemical processing of a natural material. 2. Nylon is a true synthetic fibre. 3. Acrylic is used as a wool substitute. 4. Terylene absorbs water easily.	(1)
	Which statements are correct? A) 1, 2 and 3 B) 1 and 4 C) 2 and 4 D) 1, 2, 3 and 4	
11.	Three vessels A, B and C of different shapes contain water up to the same height as shown in the figure P_A, P_B and P_C be the pressures exerted by the water at the bottom of the vessels A, B and C respectively. Then  A) $P_A > P_B > P_C$ B) $P_A < P_B > P_C$ C) $P_A < P_B < P_C$ D) $P_A = P_B = P_C$	(1)
12.	A city replaces petrol buses with electric buses powered by electricity generated mainly from coal. Which conclusion is most accurate? A) No energy is used. B) Pollution is automatically eliminated. C) Pollution may be reduced at the point of use, but emissions can still occur at the power plant. D) Coal becomes a renewable source.	(1)

13.	Two solutions are connected separately to identical bulbs using the same circuit arrangement. Solution X produces a brighter glow than solution Y. Which statement best explains this? A) X necessarily has a higher temperature B) X contains a greater number of free mobile ions available for conduction C) Y contains only positive ions D) X must contain metal electrodes	(1)
14.	Which observation does NOT support the classification of a plastic as a thermoplastic? A) It has a linear arrangement of monomers. B) It softens on heating. C) It can be remoulded. D) It has a cross-linked arrangement of monomers.	(1)
15.	Fuel X has a calorific value of 40,000 kJ/kg and fuel Y has a calorific value of 50,000 kJ/kg. A person burns 2 kg of X and 1.5 kg of Y. Which fuel provides more total heat? A) X, because more mass is burnt B) Y, because its calorific value is higher C) Both provide equal heat D) Cannot be determined	(1)
16.	A copper rod obtained from an industrial process contains impurities. It is to be converted into pure copper using electrolysis. Which arrangement is correct for electrorefining? A) Pure copper as anode and impure copper as cathode B) Impure copper as anode and pure copper as cathode	(1)
	C) Both electrodes made of pure copper D) Both electrodes made of impure copper	
	Note: For questions 17 to 20, two statements are given-one labeled Assertion (A) and the other labeled Reason (R) Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below: (a) Both A and R are true and R is the correct explanation of Assertion. (b) Both A and R are true and R is not the correct explanation of Assertion. (c) A is true but R is false. (d) A is false but R is true.	
17.	Assertion (A): Leaves are the primary sites for photosynthesis in green plants. Reason (R): Leaves contain chloroplasts filled with chlorophyll, which traps sunlight for photosynthesis.	(1)
18.	Assertion (A): Atmospheric pressure is greater at the top of a mountain than at sea level. Reason (R): The column of air above a mountain is shorter than that above sea level.	(1)

19.	Assertion (A): A substance having a high calorific value is necessarily the best fuel for every purpose. Reason (R): Selection of a fuel also depends on factors such as ignition temperature, availability, cost and pollution produced.	(1)
20.	Assertion (A): Storing food in airtight containers helps slow down food spoilage. Reason (R): Microorganisms cannot survive or reproduce in the absence of oxygen.	(1)
21.	Section - B (Question No. 21 to 26 are S.A. I Type Questions) Two students make the following statements: Student A: "All cells have the same shape." Student B: "Cells have different shapes according to their functions." Who is correct? Give one suitable example to support your answer. OR During a practical class, a student prepares temporary slides of onion peel and human cheek cells. A) Name the stain used for each slide. B) Write one characteristic observation for each slide.	(2)
22.	A student heats two plastic samples. Sample A softens and can be remoulded, whereas Sample B retains its shape. Classify A and B and relate their behaviour to their molecular arrangement.	(2)
23.	A bowl of curd kept outside the refrigerator becomes sour more quickly during summer. A) Name the microorganism responsible for converting milk into curd. B) Why does the curd turn sour faster at higher temperatures?	(2)
24.	A coal mine contains three different types of coal—peat, lignite and bituminous coal—formed at different stages of coal formation. A) Arrange peat, lignite and bituminous coal in the increasing order of their carbon content.	(2)
	B) Which of these is considered a better quality coal, and why?	
25.	A glass rod is rubbed with silk cloth and an ebonite rod is rubbed with wool. A) Identify the type of charge developed on each rod. B) When these rods are brought near each other, they attract. What conclusion can be drawn from this observation?	(2)

26.	Give reasons for the following: A) Broad straps of school bags are preferred over thin straps. B) Mountaineers sometimes suffer from nose bleeding.	(2)
	Section - C (Question No. 27 to 33 are S.A II Type Questions)	
27.	A student observed three different plant parts: green leaves, a coloured flower petal, and a potato tuber. A) Name the type of plastid mainly present in each of these parts. B) State one important function of each plastid. C) Why are plastids called characteristic organelles of plant cells?	(3)
28.	Complete the following table by filling the blanks. Principle of preservation Method used Food item stored i) _____ ii) _____ Chips iii) _____ Using salt and sugar Jams/pickles Heating below 100 degrees iv) _____ v) _____ followed by quick cooling Removal of oxygen to make vi) _____ Nuts microbes deprived of it.	(3)
29.	In food-processing and textile machines, oil cannot be used as a lubricant as it may spoil food or stain fabrics. An air cushion is used as a lubricant instead. A) Write any two advantages of using compressed and purified air as a lubricant. B) Why is lubrication necessary in machines?	(3)
30.	A) Draw a neat and labelled diagram showing the occurrence of petroleum deposits beneath the Earth's surface. B) What is crude oil?	(3)
31.	In a kitchen gas burner, sometimes the flame appears blue, while at other times it turns yellow. A) What does a blue flame indicate about the combustion of the fuel? B) What does a yellow flame indicate? C) Explain the change in the type of combustion when the flame changes from blue to yellow.	(3)
32.	Three fibres are tested for tensile strength.	(3)

	Fibre Load required to break the fibre P 1.5 kg Q 4 kg R 2.5 Kg A) Which fibre has the highest tensile strength? B) Arrange P, Q and R in increasing order of tensile strength. C) State the observation on which your conclusion is based. OR A student says, "A fibre that does not react easily with chemicals must always be environmentally safe." Do you agree with this statement? Give reasons to support your answer.	
33.	A student passes electric current through an electrolyte using two electrodes. After some time, changes are observed at the electrodes and in the solution. A) What do these observations indicate about the nature of the process taking place? B) Mention any two observations that can indicate that a chemical reaction has taken place during electrolysis.	(3)
	Section - D (Question No. 34 to 36 are L.A. Type Questions)	
34	A student is given three descriptions: I: Controls cell activities and contains genetic material. II: Produces energy required for various cellular activities. III: Contains a green pigment and helps manufacture food in plants. A) Identify A and B. B) Explain why C is found mainly in plant cells and not in animal cells. C) Name the green pigment present in C. OR A student says, "The cell wall and cell membrane perform the same function because both form the outer boundary of a cell." A) Do you agree? Give two differences between them. B) Explain why an animal cell can survive without a cell wall whereas a plant cell benefits from having one. C) Which of the two structures controls the movement of substances into and out of the cell?	(5)

35.	Observe the given experimental setup and answer the following: A coil of insulated copper wire is connected to a bulb. A bar magnet is moved rapidly towards the coil and then withdrawn from it. A) Draw a neat and labelled diagram of the given experimental setup. Name the scientist who discovered the phenomenon demonstrated by this activity and state its underlying principle. B) What will you observe when the magnet is moved towards the coil and then withdrawn from it? What happens to the direction of current when the magnet is withdrawn? OR	(5)
	A student sets up an electrolytic cell using a copper plate, zinc plate and copper sulphate solution. After passing electric current for some time, a reddish-brown coating is observed on the zinc plate. A) Based on the given condition: - Draw a labelled diagram of the electrolytic cell, showing the anode, cathode, electrolyte and their connection to the battery. - Identify the electrode on which the reddish-brown coating is formed and explain what happens to the copper plate during the process. B) The student repeats the activity by replacing the zinc plate with a carbon rod as the cathode. Predict the observation and give a reason for your answer.	
36.	A student pushes the same wooden block with the same force on three different surfaces and makes the following observations: Surface Observation Glass Block moves very easily Wooden Table Block moves with some difficulty Rough carpet Block requires much more effort A) Based on the observations, identify which surface produces the least friction and which produces the greatest friction. Explain your answer. B) If the same block is made heavier, how will the friction between the block and the surface change? Give a reason. Also, mention one situation where high friction is useful and one situation where low friction is useful. OR A student releases the same toy car from the same height on three tracks. He records the following observations: Track Surface Distance travelled A Smooth 180 cm B Wooden 120 cm C Rough cloth 70 cm A) Arrange the three tracks in increasing order of friction. Which track experiences the maximum friction? Give a reason based on the observations. B) Explain why the car travels different distances on the three tracks. What would happen to the distance travelled if the rough cloth on Track C were replaced by a smoother material? Also, identify one variable kept constant in this experiment.	(5)

	Section - E (Question No. 37 to 39 are case-based/source-based Questions and contain five sub parts each. You are expected to answer any four sub parts in these Questions)	
37.	During the annual village fair, two families prepared homemade food items for sale. Family 'A' prepared mango pickle using the traditional method by adding sufficient salt and storing it in sterilised airtight glass jars. Family 'B' prepared strawberry jam but reduced the amount of sugar to make it a "healthier" product. Both products were kept at room temperature for nearly three weeks. When the jars were opened, Family A's pickle remained fresh and safe for consumption, whereas Family B's jam developed fungal growth, an unpleasant odour and signs of spoilage. The village health officer explained that the difference was not merely due to cleanliness but also because of the scientific principles involved in food preservation. Read above paragraph and answer the following questions: A) Which preservation technique was effectively used by Family 'A' to extend the shelf life of the pickle? B) Why did reducing the amount of sugar make the jam more susceptible to spoilage? C) A student suggests that refrigeration alone could have completely prevented spoilage of the jam. Do you agree? Give a reason for your answer. D) Suggest one alternative method of food preservation, other than increasing sugar content, that could have improved the shelf life of the jam. E) State one scientific principle common to both salt and sugar preservation methods.	(4)
38.	A science teacher gives two transparent cylindrical pipes to a group of students. A thin rubber sheet is tightly fixed over the bottom of each pipe. The students pour water into the pipes and observe that the rubber sheet bends outward. They then add more water to one of the pipes. As the height of the water column increases, the rubber sheet bulges further. One student claims that the greater bulging occurs because the water is "pressing harder sideways." Another student argues that the increased bulging is related to the greater height of the water column above the bottom. Read above paragraph and answer the following questions: A) What does the outward bulging of the rubber sheet indicate about water? B) Which variable is being changed when more water is added to the same pipe? C) What conclusion can be drawn from the increased bulging of the rubber sheet? D) If the same amount of water were placed in a wider container of the same height, would the pressure at the bottom necessarily become greater? Give a reason. E) What is the pressure exerted by a stationary liquid at a point inside it called?	(4)

39.	A school laboratory stores several substances in a closed storage room. One afternoon, a student notices that a small piece of combustible material suddenly catches fire without any external flame or direct heating. In another part of the laboratory, a tightly closed container containing combustible vapours catches fire suddenly and produces heat, light and a loud sound. The teacher immediately opens the area where it is safe to do so and removes nearby sources of ignition. Read above paragraph and answer the following questions: A) What type of combustion is illustrated by the first incident? B) Why can this type of combustion occur without an externally supplied flame? C) How does the second incident differ from the first in terms of the speed and nature of combustion? D) Identify the three essential conditions that must be present for ordinary combustion to continue. E) Why is removing any one of these conditions an effective principle of fire control?	(4)
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