

**BUDHA DAL PUBLIC SCHOOL PATIALA**

**Final Examination (10 March 2026)**

**CLASS IX**

**PAPER- SCIENCE (SET-A)**

**M.M. 80**

**Time: 3 hr.**

**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**

**Biology**

- Q1. The proteins and lipids, essential for building the cell membrane, are manufactured by (1)  
a) Endoplasmic reticulum b) Golgi apparatus c) Plasma Membrane d) Mitochondria
- Q2. Select the incorrect statement (1)  
a) Blood has matrix containing proteins, salts and hormones  
b) Two bones are connected with ligament  
c) Tendons do not connect muscle to a bone  
d) Cartilage is a form of connective tissue
- Q3. In desert plants, rate of water loss gets reduced due to the presence of (1)  
a) Cuticle b) Stomata c) Lignin d) Suberin
- Q4. Milk yield of a cow is determined by (1)  
a) Quantity of milk per milking b) Length of lactation period  
c) Period between two pregnancies d) Both (a) and (b)
- Q5. For the following questions, 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: (1)  
a) Both A and R are true and R is the correct explanation of the assertion.  
b) Both A and R are true but Reason R is not a correct explanation of Assertion.  
c) A is true but R is false.  
d) A is false but R is true.  
**Assertion :** Pulses are rich in carbohydrates.  
**Reason:** Many of the pulses are kharif crops.
- Q6. For the following questions, 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: (1)  
a) Both A and R are true and R is the correct explanation of the assertion.  
b) Both A and R are true but Reason R is not a correct explanation of Assertion.  
c) A is true but R is false.  
d) A is false but R is true.  
**Assertion :** Larger the body size, the larger is the size of cell.  
**Reason:** Human body has 100 trillion cells.
7. Identify the type of cell and write one characteristic feature of each : (1)  
a) Cell does not burst even in very dilute medium.  
b) Nuclear region is not well defined and is known as the nucleoid

A - I



OR

Q13. Explain what happens when a drop of concentrated sugar solution is placed on a rheo leaf boiled in water before mounting on a glass slide. Give reason for your answer.

Q8. Write one function of each of the following tissues and also name the chemicals present in their wall thickenings. (2)

- a) Collenchyma    b) Cork cells (3)

Q9. Identify and draw labelled diagrams of:

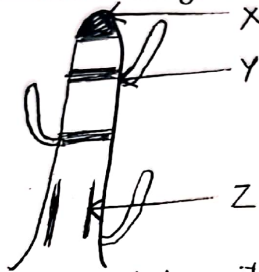
Muscular tissue mostly attached to bones and helps in body movements. Write two structural features also. (3)

Q10. Mention the type of Honey Bee (scientific name) you will prefer to rear if you are running an apiary. Give any three reasons for your choice. List the factor on which the quality of honey depends. (3)

OR

- a) Differentiate between broilers and layers including their management.  
b) Give an example each for indigenous and exotic breeds of poultry.

Q11. a) Label X, Y and Z locations in the given figure and give one function of each part (5)



Location of meristematic tissues in plant body.

b) Write four differences between Bone and Cartilage

Q12. Case Study: (4)

Read the passage and answer the following questions:

Though we do not find this method of cropping in our fields, the best method of sowing and reaping crops is intercropping. It is much superior to mixed cropping. Intercropping can incorporate crop rotation. The technique makes the farmers busy throughout the year. Productivity is increased. Soil erosion is prevented. Pests and weeds remain under control.

- a) What is intercropping?  
b) Intercropping is superior to all other means of cropping because  
i) Better utilization of minerals and water from different layers of soil  
ii) Nonspread of weeds to whole cropping area  
iii) Nonspread of pests to whole cropping area  
iv) All the above  
c) Which method of cropping prevents soil erosion by checking soil creep after harvesting of a crop  
i) Inter-cropping    ii) Mixed cropping    iii) Monocropping    iv) All the above  
d) Modern cropping is based on machines from sowing to harvesting. Which is the best method of cropping for this?  
i) Mixed cropping    ii) Intercropping    iii) Monocropping    iv) Crop rotation

A-2

Section - B  
Chemistry

- Q13. Which of the following represent the suitable conditions for liquefaction of gases? (1)  
a) Low temperature, low pressure  
b) High temperature, low pressure  
c) Low temperature, high pressure  
d) High temperature, high pressure
- Q14. The ratio of mass of C and oxygen in carbondioxide is (1)  
a) 1 : 2    b) 3 : 14    c) 3 : 8    d) 3 : 11
- Q15. A neutral atom contains 11 protons, 12 neutrons and 11 electrons. The atom is of (1)  
a) Potassium    b) Sodium    c) Lithium    d) Magnesium
- Q16. The name of NaOH is (1)  
a) Sodium oxide    b) Sodium hydroxide    c) Sodium peroxide    d) None of these
- Q17. The rate of evaporation does not increase with (1)  
a) increase in movement of air  
b) increase in temperature of liquid  
c) increase in humidity in air  
d) increase in temperature of surroundings
- Q18. Which of the following is not a mixture? (1)  
a) soil    b) air    c) lime stone    d) milk
- Q19. The atomicity of ozone molecule is (1)  
a) 1    b) 2    c) 4    d) 3
- Q20. For the following questions, 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: (1)  
a) Both A and R are true and R is the correct explanation of the assertion.  
b) Both A and R are true but Reason R is not a correct explanation of Assertion.  
c) A is true but R is false.  
d) A is false but R is true.
- Assertion : In Rutherford's experiment, most of the  $\alpha$  -particle passed through the gold foil undeflected.
- Reason : Most of the space inside atom is empty.
- Define the following items (2)  
a) Pure substance    b) Tyndall effect
- Name A, B, C, D in the following diagram. (2)
- a) Define and explain Bohr Bury scheme of distribution of electrons in different shells. (3)  
b) What was the main drawback of Rutherford model of atom

OR

A diagram of nucleus of atom is shown below:



A - 3



- a) Draw a diagram to show the electronic arrangement of this atom.  
 b) What is the mass number of this atom?  
 c) How many neutrons will be present in positive ion of this atom.

(3)

Q24.

- a) Define poly atomic ion. Give one example.  
 b) Calculate the formula unit mass of  $\text{CaCO}_3$  (Atomic Mass of C = 12u, Ca = 40u, O = 16u)  
 c) Write formula of (i) sodium oxide (ii) magnesium hydroxide by cross multiplication method

(5)

Q25.

- i) Write any 4 postulates of Dalton's atomic theory.  
 ii) Name a metal and non-metal which exist in liquid state.  
 iii) With the help of law of conservation of mass, predict the value of Y, Z  

$$A + B \rightarrow C + D \quad A + B \rightarrow C + D$$
  
 a) Y 5 3 4      b) 1.5 3.8 Z 3

OR

- a) Identify the dispersed phase and dispersing medium in the Fog  
 b) Define solubility. How does the solubility of a solute in solvent change with an increase in temperature?  
 c) Distinguish between true solution and suspension (4 points)

(4)

Q26.

Read the paragraph and answer the following questions:  
 From the given table :

| Element | Mass No. | Atomic No. |
|---------|----------|------------|
| A       | 3        | 2          |
| B       | 9        | 4          |
| C       | 11       | 5          |
| D       | 19       | 9          |
| E       | 23       | 11         |

- Q1. How many electrons are present in B?  
 Q2. Which is an inert gas? Why?  
 Q3. Which element has 12 neutrons? Name that element.

OR

Q3. What are isotopes? Give example.

### Section - C Physics

(1)

Q27. An object sinks in a liquid, if the buoyant force is  
 a) zero    b) less than its weight    c) greater than its weight    d) equal to its weight

(1)

Q28. Slope under a V-t graph represents a physical quantity which has the unit  
 a)  $\text{ms}^{-2}$     b) m    c)  $\text{ms}^{-1}$     d)  $\text{m}^3$

Q29. A sound wave travels at a speed of 339 m/s. If its wavelength is 1.5cm, what is the frequency of the wave?

- a) 20,000 Hz    b) 25,000 Hz    c) 22,600 Hz    d) 22,965 Hz

(1)

Q30. According to 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

A-L

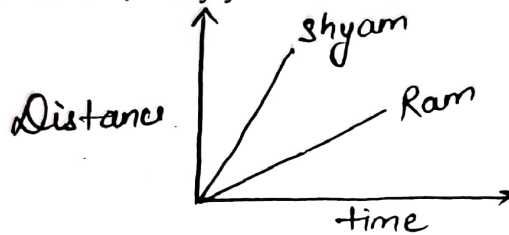


- Q31. A flying bird in the sky possesses which energy? (1)  
 a) only kinetic energy  
 b) only potential energy  
 c) neither kinetic energy nor potential energy  
 d) both kinetic energy and potential energy
- Q32. For the following questions, two statements are given – one labeled Assertion (A) and the other labeled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below: (1)  
 a) Both A and R are true and R is the correct explanation of the assertion.  
 b) Both A and R are true but Reason R is not a correct explanation of Assertion.  
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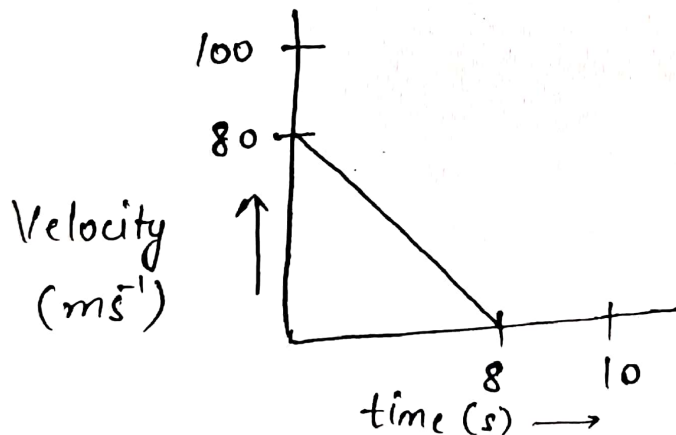
Assertion : The value of 'g' is greater at the poles than at the equator.

Reason : Radius is more at the equator than at the poles.

- Q33. A ball is thrown vertically upwards with a velocity of 49m/s. Calculate (i) the maximum height to which it rises (ii) the total time it takes to return to the surface of the earth. (2)
- Q34. The distance time graph for motion of Ram and Shyam is shown alongside. Which of them has greater acceleration? Justify your answer. (2)



- Q35. Draw a curve showing density or pressure variations with respect to distance for a disturbance produced by sound. Mark the position of compression and rarefaction on this curve. Also define wavelengths and time period using this curve. (3)
- Q36. An object of mass  $M$  is moving with a constant velocity  $v$ . How much work should be done on the object to bring the object to a constant velocity  $v/3$ ? (3)
- Q37. Velocity versus time graph of a ball of mass 50g rolling on a concrete floor is shown in figure. Calculate the acceleration and frictional force of the floor on the ball. (3)



- a) A human heartbeats 72 times in a minute. Calculate its frequency. (4)  
 b) Why are the ceilings of concert halls curved?  
 c) What is Reverberation?  
 d) An echo returned in 3 sec. What is the distance of the reflecting surface from the source, given that speed of sound is 342 m/s

A-5

Q39.

**Read the paragraph and answer the following questions:**

(4)

The force acting on an object perpendicular to the surface is called thrust. When you stand on loose sand, the force, that is, the weight of your body is acting on an area equal to area of your feet. When you lie down then the same force acts on an area equal to the contact area of your whole body, which is larger than the area of your feet. Thus, the effects of forces of the same magnitude on different areas are different. In the above cases, thrust is the same. But effects are different. Therefore the effect of thrust depends on the area on which it acts. The effect of thrust on sand is larger while standing than while lying. The thrust on unit area is called pressure.

(i) SI unit of thrust is

- (a) m/s (b) m/s<sup>2</sup> (c) Newton(N) (d) None of these

(ii) We have two different areas A and B. where  $A > B$ . Then relation between pressure on A ( $P_A$ ) and pressure on B ( $P_B$ ) is

- (a)  $P_A > P_B$  (b)  $P_B > P_A$  (c)  $P_A = P_B$  (d) None of these

(iii) SI unit of pressure is

- (a) N/m<sup>2</sup> (b) Pascal (c) Both a and b (d) None of these

(iv) The effects of forces of the same magnitude on different areas are different. True or false

- (a) True (b) False (c) None of these