



Einstein

PUBLIC SCHOOL

Nurturing a better tomorrow

SUMMER VACATION HOLIDAY HOMEWORK- 2025-26

Class- IX

हिन्दी

1. मुंशी प्रेमचंद जी को उपन्यासों का सम्राट कहा जाता है तर्क सहित उत्तर दीजिए।
2. इस जल प्रलय नामक पाठ के आधार पर, आपदा से निपटने हेतु अपनी तरफ से सुझाव व्यक्त कीजिए।
3. 21 जून अंतर्राष्ट्रीय योग दिवस पर योगा करते हुए एक छात्रा का सचित्र वर्णन कीजिए।
4. कबीर दास जी का संक्षिप्त जीवन परिचय लिखिए।
5. उपसर्ग तथा प्रत्यय के 20.20 उदाहरण लिखें।
6. निम्न में से किसी एक का सचित्र वर्णन कीजिए।
 - ✓ विद्यार्थी जीवन
 - ✓ पर्यावरण
 - ✓ अनुशासन

English

A. READING:

1. Read LESSON 2 and 3 (ADVENTURES OF TOTO & ISWARAN THE STORYTELLER) OF MOMENTS book
2. Read a novel of your choice.
3. Recite and learn two poems- The Road Not Taken and WIND of BEEHIVE Book.

B. WRITING:

1. Summarize the poems you read above in your own words, find out the poetic devices used in the poem.
2. Write the Answers to the questions given in ADVENTURES OF TOTO in your notebook.
3. Prepare a note of 5 HEADLINES (only positive news) from any ENGLISH NEWSPAPER for 15 days and write the new words with their meanings and make 1 sentence from each word.
4. Prepare a TENSE CHART with proper sentence structure and examples.
5. Write a diary entry about a memorable experience from your summer vacation and the new things you tried or learnt recently.

C. LISTENING:

1. Listen to the English news channels daily for preparing HEADLINES asked above.

D. SPEAKING:

Prepare a speech on "My Vision For India".

Mathematics

Instructions:

- Solve all questions in a separate notebook.
- Neatly write the question number and show all steps of calculation.
- Attempt all questions sincerely and revise the concepts.

Chapter 1: Number System

1. Rational and Irrational Numbers

1. Q1. Find five rational numbers between 2 and 3.
2. Q2. Find 3 irrational numbers between 2 and 3 .
3. Q3. Represent $\sqrt{5}$ on the number line using geometric method.

2. Real Numbers

4. Q4. Express 0.151515... in the form p/q .
5. Q5. Simplify and express the result in rational form:
(a) $(2 + \sqrt{3})(2 - \sqrt{3})$
(b) $(3 + \sqrt{5})^2$

3. Laws of Exponents for Real Numbers

6. Q6. Simplify:
(a) $(2^3 \times 2^4) / 2^5$
(b) $(5^{-2} \times 25^1)$
7. Q7. Express the number in exponential form:
 $1 / (2\sqrt{2})$

Chapter 2: Polynomials

1. Introduction & Types

8. Q8. Classify the following as linear, quadratic, or cubic polynomials:
(a) $x^2 + 2x + 1$
(b) $3x + 4$
(c) $x^3 - x^2 + 2$

2. Algebraic Identities

9. Q9. Use appropriate identities to simplify:
(a) $(x + 3)^2$
(b) $(2x - 5)(2x + 5)$
(c) $(a + b + c)^2$

3. Operations on Polynomials

10. Q10. Divide the polynomial $3x^2 + 5x - 2$ by $x + 1$ using long division method.
11. Q11. Find the value of polynomial $p(x) = 2x^2 - 3x + 1$ at:
(a) $x = 0$
(b) $x = 2$
(c) $x = -1$

Chapter 3: Coordinate Geometry

1. Basics of Cartesian Plane

12. Q12. Plot the points: A(2, 3), B(-1, -2), C(0, 4), and D(-3, 1). Identify the quadrant for each.

Bonus Activity (Optional but Recommended):

- Make a chart or presentation on:
- Real-life applications of coordinate geometry.
- Famous mathematicians who contributed to algebra and geometry.

Physics

1. Explain the following terms

- i. Describing Motion Concept of Distance and Displacement
- ii. Uniform Motion
- iii. Non uniform Motion
- iv. Measuring the Rate of Motion Concept of Speed
- v. Speed with Direction Concept of Velocity
- vi. Rate of Change of Velocity Concept of Acceleration.
- vii. Graphical Representation of Motion
- viii. Distance Time Graphs
- ix. Velocity-Time Graphs .
- x. Derivation of Equations of Motion by Graphical Method
- xi. Equation for Velocity-Time Relation
- xii. Equation for Position-Time Relation
- xiii. Equation for Position Velocity Relation
- xiv. Uniform Circular Motion
- xv. Examples of Uniform Circular Motion

ADDITIONAL QUESTIONS

Solve at least 15

*Objective type

*,short & very short type,

*Long and case study based questions from the chapter

Motion .

1. A body starts to slide over a horizontal surface with an initial velocity of 0.5 m/s. Due to friction, its velocity decreases at the rate of 0.05 m/s^2 How much time will it take for the body to stop.
2. A train starting from rest moves with a uniform acceleration of 0.2 m/s^2 for 5 minutes acquired and the distance travelled in this time.
3. A bus was moving at a speed of 54 km/h. On applying brakes, it stopped in 8 seconds. Calculate the acceleration and the distance travelled before stopping
4. A motor cycle moving with a speed of 5 m/s is subjected to an acceleration of 0.2 m/s^2 . Calculate the speed of the motor cycle after 10 seconds, and the distance travelled in this time.
5. The brakes applied to a car produce an acceleration of 6 m/s^2 in the opposite direction to the motion. If the car takes 2 s to stop after the application of brakes, calculate the distance it travels during this time.
6. A train starting from rest attains a velocity of 72 km/h in 5 minutes Assuming that the acceleration is uniform. find (i) the acceleration and (ii) the distance travelled by the train for attaining this velocity.

7. A car accelerates uniformly from 18 km/h to 36 km/h, in 5 seconds. Calculate (i) the acceleration and (ii) the distance covered by the car in that time
8. An object travels 16 m in 4 s and then another 16 m in 2 s. What is the average speed of the object?
9. The odometer of a car reads 2000 km at the start of a trip and 2400 km at the end of the trip. If the trip took 8 h. calculate the average speed of the car in km/h and m/s.
10. Usha swims in a 90 m long pool. She covers 180 m in one minute by swimming from one end to the other and back along the same straight path. Find the average speed and average velocity of Usha.
11. Starting from a stationary position, Rahul paddles his bicycle to attain a velocity of 6 m/s in 30 s. Then he applies brakes such that the velocity of bicycle comes down to 4 m/s in the next 5 s. Calculate the acceleration of the bicycle in both the cases.
12. A train travels some distance with a speed of 30 km/h and returns with a speed of 45 km/h. Calculate the average speed of the train.
13. A train 100 m long moving on a straight level track passes a pole in 5 s. Find (a) the speed of the train
(b) the time it will take to cross a bridge 500 m long.
14. A car travels along a straight line for first half time with speed 40 km/h and the second half time with speed 60 km/h. Find the average speed of the car.

Activity:-

- ✓ Differentiating between uniform and non-uniform motions.
- ✓ Understanding the uniform circular motion.

Chemistry

Chapter: Matter in Our Surroundings

1. Conceptual Worksheets (To be done in notebook)

- - Define matter. What are its characteristics?
- - Explain the different states of matter with examples.
- - Differentiate between solids, liquids, and gases in a table form (any five differences).
- - What is diffusion? Give one example each in gases and liquids.
- - Write the factors that affect the rate of evaporation. Explain with examples.
- - What is latent heat? How is latent heat of vaporization different from latent heat of fusion?

2. Activity-Based Learning

Activity 1: Observation of Diffusion

Objective: To observe diffusion in liquids.

Instructions:

- - Take two glasses of water.
- - Add a drop of ink to one without stirring and observe.
- - Heat the second glass to warm the water, then add ink.
- - Compare the time taken for diffusion in both.

Task: Record your observations and write a short conclusion. Attach photos if possible.

3. Fun with Science (Creative Task)

Poster Making

Topic: "States of Matter and Their Properties"

- - Make a colorful and informative poster.
- - Use diagrams, keywords, and examples.
- - Size: A4 sheet

4. Research Work

Write a short report (150–200 words) on any one of the following:

- - How does air conditioning help us feel cool using the concept of evaporation?
- - How do pressure cookers work based on the relationship between pressure and boiling point?

5. Quiz Yourself (MCQs – Choose the correct answer)

- Which of the following has the highest rate of diffusion?

- a) Solid
- b) Liquid
- c) Gas
- d) Plasma

- The boiling point of water on hills is:

- a) 100°C
- b) Less than 100°C
- c) More than 100°C
- d) Same as at sea level

- Which one of the following will show the highest evaporation rate?

- a) Water in a closed bottle
- b) Water kept in the shade
- c) Water kept under a fan
- d) Water kept in a humid place

Biology

Short types questions:-

1. Who discovered cells, and how?
2. Why is the cell called the structural and functional unit of life?
3. Why is the plasma membrane called a selectively permeable membrane?
4. Write differences between prokaryotic and eukaryotic cells.
5. Can you name the two organelles we have studied that contain their own genetic material?
6. Why are lysosomes known as suicide bags?
7. Where are proteins synthesised inside the cell?
8. Make a comparison and write down ways in which plant cells are different from animal cells.

MCQ based question

1. Which plastids are colourless?

- (a) Chromoplasts
- (b) Chloroplast
- (c) Leucoplasts
- (d) All of the above
- (e) None of the above

2. An unripe green fruit changes colour when it ripens. The reason being:

- (a) Chromoplasts changes to chlorophyll
- (b) Chromoplasts changes to chromosomes
- (c) Chromosomes changes to chromoplasts
- (d) Chloroplast changes to chromoplasts
- (e) None of the above

3. The phenomenon where cytoplasms shrink in a hypertonic medium is called:

- (a) Frontolysis
- (b) Plasmolysis
- (c) Acidolysis
- (d) Allolysis
- (e) None of the above

4. _____ is called the energy currency of the cell

- (a) Endoplasmic reticulum
- (b) Oxygen
- (c) ATP
- (d) Mitochondria
- (e) None of the above

5. _____ is called the powerhouse of the cell

- (a) Mitochondria
- (b) ATP
- (c) Lysosomes Red blood cells
- (d) None of the above

6. _____ coined the term "cell."

- (a) Gorbachev
- (b) Himmler
- (c) Robert Hooke
- (d) Antonie van Leeuwenhoek
- (e) None of the above

7. Which of the following statements is incorrect?

- (a) Cytoplasm is also known as protoplasm
- (b) Lysosomes are known as the suicide bags of the cell
- (c) Mitochondria has its own DNA
- (d) All of the above are incorrect
- (e) None of the above

8. Which of the following is not a function of the vacuole in plants?

- (a) They store toxic metabolic wastes
- (b) They help with the process of cell division
- (c) They help to maintain turgidity
- (d) They provide structural support
- (e) None of the above

9. Where are the essential proteins and lipids required for cell membrane, manufactured?

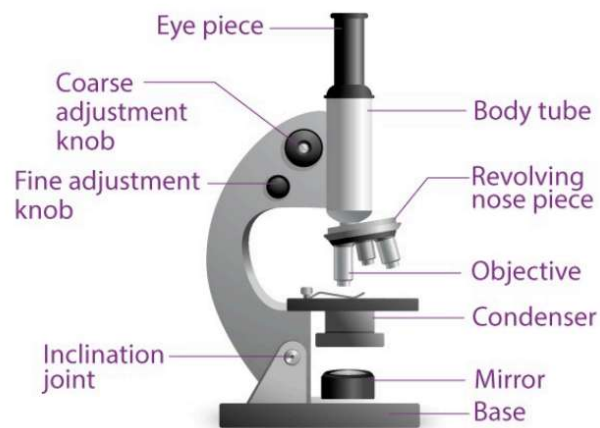
- (a) Lysosome
- (b) Chromosomes
- (c) Endoplasmic reticulum

- (d) Mitochondria
- (e) None of the above

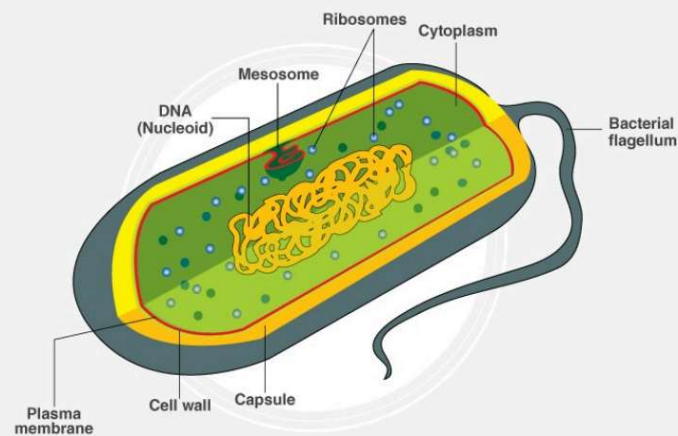
10. The process by which water moves through a semi-permeable membrane from a region of high concentration to a region of lower concentration, thereby equalizing water concentration is called: (a)

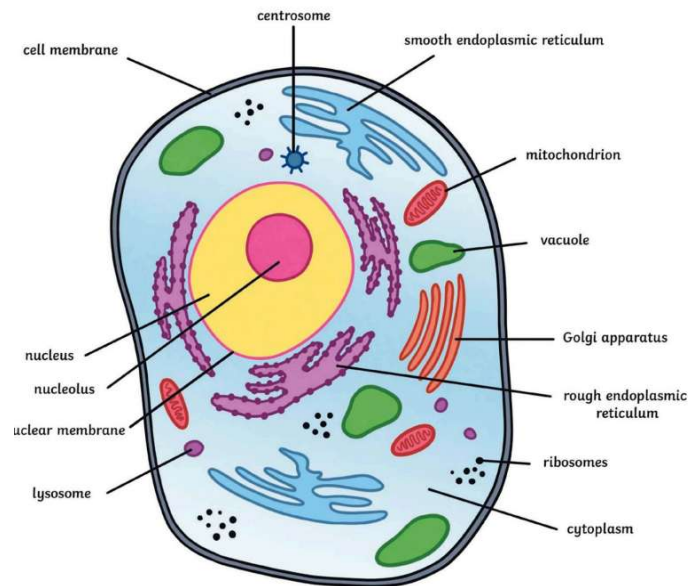
- Evaporation
- (a) Diffusion
- (b) Osmosis
- (c) All of the above
- (d) None of the above

COMPOUND MICROSCOPE

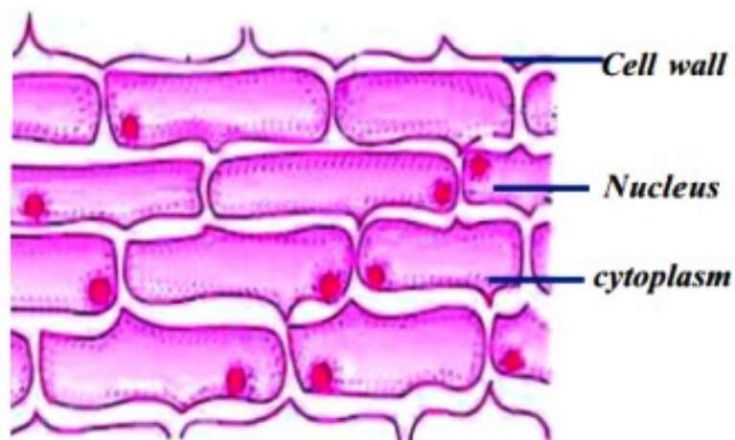
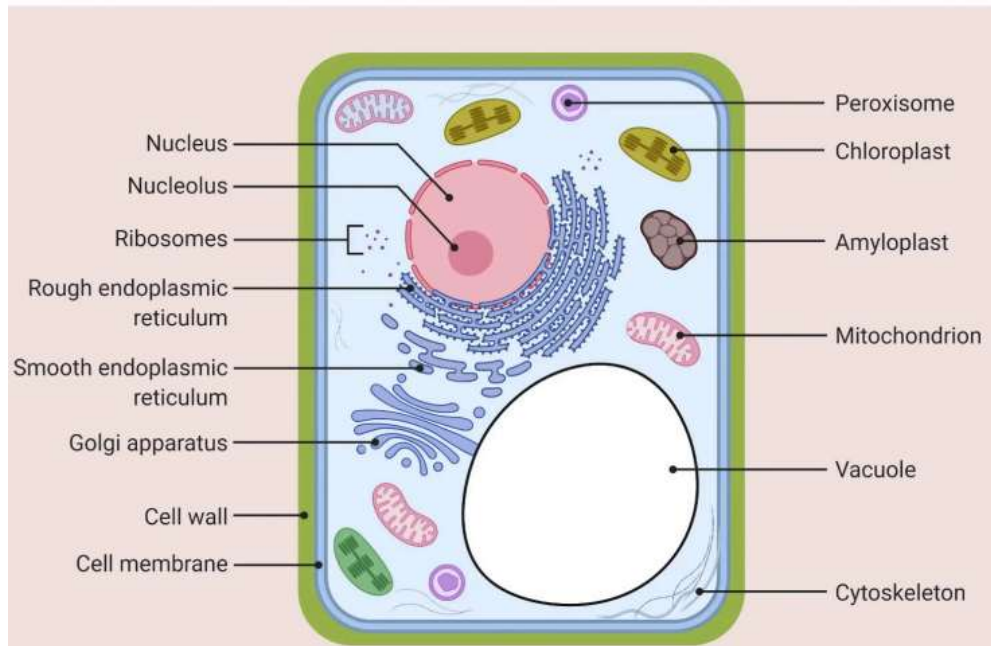


PROKARYOTIC CELLS





Plant Cell



Onion peel

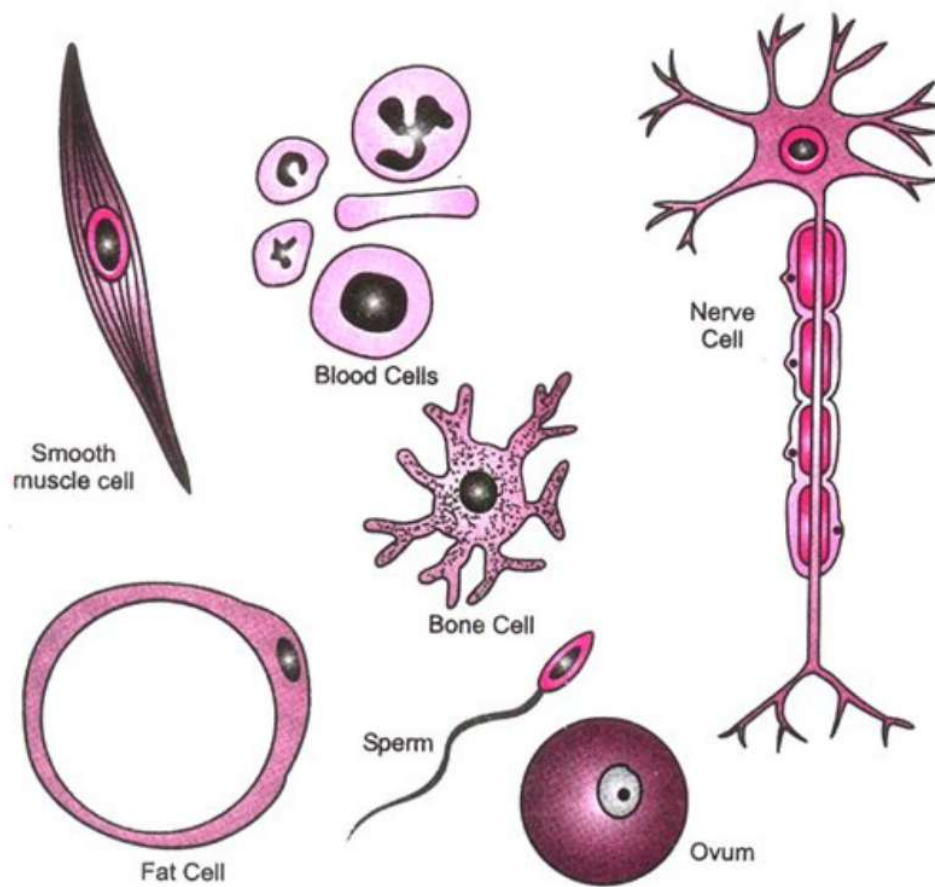


Figure : VARIOUS CELLS FROM THE HUMAN BODY



Artificial Intelligence

Subject: Geography

Chapter 1 – India: Size and Location

1. Map Work: Activity work

Mark the following on a political map of India:

Standard Meridian of India

Tropic of Cancer

Neighbouring countries

Southernmost point (Indira Point)

States through which the Tropic of Cancer passes

2. Short Answer Questions:

(a) Write short notes on:

(b) India's latitudinal and longitudinal extent

(c) Why is the time difference between Arunachal Pradesh and Gujarat almost 2 hours?

(d) Importance of India's central location

3. Project: Project work and activity

(a) Create a mini-report on India's location with respect to:

(b) The world

(c) Its neighbouring countries

(d) Major sea routes and trade

History

Chapter 1 – The French Revolution

1. Timeline Activity:

Make a timeline of 10 key events of the French Revolution (1789 to 1799) with short descriptions and pictures.

2. Short Answer Questions:

(a) What was the Estates System?

(b) Who were the Jacobins?

(c) Write a paragraph on the fall of the Bastille.

3. Creative Work:

Create a pamphlet or poster that might have been used during the French Revolution to spread revolutionary ideas.

Economics

Chapter 2 – People as Resource

1. Chart Making:

Prepare a chart showing the division of human resources in India based on:

Education (literate/illiterate)
Gender
Urban and rural areas

2. Questionnaire Activity:

Interview 2 people from your family/neighbourhood:
What is their education qualification?
What is their occupation?
How do they contribute to the economy?

3. Short Answer Questions:

- (a) What is human capital?
- (b) How does education improve human capital?

Political Science

Chapter – What is Democracy? Why Democracy?

1. Concept Map:

Make a concept map showing:

Features of democracy

Differences between democratic and non-democratic governments

2. Short Answer Questions:

- (a) Why is democracy considered the best form of government?
- (b) What are the drawbacks of democracy?

3. Case Study Work:

Collect a recent news article about elections or democratic decision-making in India. Summarize it and explain how it reflects democracy.

Artificial Intelligence

Part-A Employability Skills

Chapter: Communication Skills

Task

Prepare a poster or digital presentation (5-6) on the topic.

“Barriers to effective communication and how to overcome them”

Include:

- Definition of communication
- Types of communication (verbal, non-verbal, Written, visual)
- at least 4 barriers with real-life examples
- Tips to overcome each barrier

Bonus (optional) Record a 1 minute video explaining how you use effective communication in daily life

Chapter: Self –Management skills

Task:

(a) Maintain a daily habit tracker for 15 days (any format: digital or handmade)

Track at least 5 self-management areas like:

- Walking up on time
- completing homework
- limiting screen time
- Exercising or walking
- Helping at home

(b) Write a short self-reflection (100-150)words on:

“How self-discipline helps me grow personally and academically”

