BABA BANDA BAHADUR PUBLIC SCHOOL

Jind Road, Rohtak, Haryana

SUMMER VACATION HOLIDAY HOMEWORK

SESSION 2026–27

SUMMER EXCELLENCE PROGRAMME

Theme:

"No Screen Learning – Learn, Create, Explore & Grow"

★ STUDENT DETAILS ★

Name : _____

Class & Section : _____

Roll No. : _____

House : _____

★ MY SUMMER VACATION GOALS

- ☐ I will follow a proper study routine.
- ☐ I will reduce unnecessary mobile usage.
- ☐ I will read daily.
- ☐ I will help my parents at home.
- ☐ I will stay healthy and active.
- ☐ I will complete my work sincerely.

★ SUMMER EXCELLENCE ASSESSMENT ★

ASSESSMENT STRUCTURE

Assessment Area	Marks
Written Work / Subject Practice	60 Marks
Presentation / Activity / Project Work	20 Marks
Parent Feedback & Student Discipline	20 Marks

Total = 100 Marks

- Holiday Homework marks will be reflected in Term Assessments.
- Focus will be given not only to written work but also to discipline, presentation, creativity, consistency and self-study habits.

★ HOLIDAY SCORE ★

Marks Obtained : _____

Teacher's Remarks :

_____

_____

_____

"Success is the result of discipline, consistency and hard work"

Holidays Homework (Class-IX)

Hindi

BABA BANDA BAHADUR PUBLIC SCHOOL

FOUNDATION * IIT-JEE * NEET * NDA * OLYMPIADS
NTSE * CA FOUNDATION * CLAT * CUET.

Holiday Homework

HINDI

विशेष निर्देश-:

कार्य साफ एवं सुंदर लिखावट में कीजिए।

चार्ट/चित्रों का प्रयोग कीजिए।

कार्य 4| शीट या प्रोजेक्ट फाइल में प्रस्तुत कीजिए।

सभी कार्य विद्यालय खुलने के प्रथम सप्ताह में जमा करवाएँ।

👉 Section A – Reading & Revision

1. प्रतिदिन एक पृष्ठ समाचार पत्र का पढ़ें।

2.Read any 2 chapters from NCERT Hindi textbook thoroughly.

3.Write:

कठिन शब्द) 20(

शब्दार्थ

मुख्य भाव

लेखक परिचय

👉 Section B – Writing Practice

1.Write one page daily in Hindi for handwriting improvement.

2.Prepare:

👉 अनुच्छेद लेखन

(Roll number 1-11)1,2,3

(Roll number 12-22)4,5,6

1. विद्यार्थी और अनुशासन

संकेत बिंदु -:विद्यार्थी जीवन और अनुशासन ,विद्यालयों में अनुशासनहीनता और उसके पनपने के कारण ,समाधान ,उपसंहार

2. प्राकृतिक स्थल की यात्रा

संकेत बिंदु -:प्रकृति और मनुष्य ,कहां की यात्रा ,प्राकृतिक सौंदर्य ,उपसंहार इस

3. भारत के राष्ट्रीय पर्व

संकेत बिंदु -:पर्व और उनके अनेक रूप ,राष्ट्रीय पर्वों के मानने के ढंग ,इन पर्वों का संदेश।

4. आदर्श विद्यार्थी

संकेत बिंदु -:विद्यार्थी का अर्थ ,विद्यार्थी में अनेक गुणों का समावेश ,सादा जीवन उच्च विचार ,व्यक्तित्व का सर्वांगीण विकास ,देश हित में योगदान ,निष्कर्ष।

5. वृक्षारोपण का महत्व

संकेत बिंदु –:वृक्षारोपण का अर्थ ,वृक्षारोपण क्यों ,हमारा दायित्व ,उपसंहार।

6. आजादी का अमृत महोत्सव संकेत बिंदु –:शुरुआत कब और कहां ,विभिन्न प्रकार के कार्यक्रम ,नए संकल्प भारत की पहचान।

☞ अनौपचारिक पत्र लेखन

(Roll number 1-11)1,2,3

(Roll number 12-22)4,5,6

1. अपने बड़े भाई के विवाह में शामिल होने के लिए अपने मित्र को निमंत्रण पत्र लिखिए।

2. अपने छोटे भाई को मोबाइल का सदुपयोग करने का सुझाव देते हुए पत्र लिखिए।

3. ट्रैकिंग पर जाने के लिए पिताजी को अनुमति पत्र लिखिए।

4. अपने छोटे भाई को स्वच्छता अपनाने तथा सभी के साथ अच्छा व्यवहार करने का सुझाव देते हुए पत्र लिखिए।

5. कक्षा में प्रथम आने पर अपने सबसे प्रिय मित्र को बधाई पत्र लिखिए।

6. पिताजी को पुस्तक खरीदने के लिए कुछ धनराशि भेजने हेतु पत्र लिखिए।

☞ Section C – Grammar

Complete practice , Work sheet

1. उपसर्ग–प्रत्यय

2. अर्थ के आधार पर वाक्य भेद

3. अलंकार

☞ Section D – Analytical Task

1.Compare any two characters from lessons studied.

Write your opinion on:

"मोबाइल का विद्यार्थियों पर प्रभाव"

☞ Section E. परियोजना कार्य) Project Work)

1. उपसर्ग) Roll number 1-5) pg. no. 71 ,72,79,80

.2प्रत्यय) Roll number 6-10) pg.no. 97,98

3. अलंकार) Roll number 11-16) pg.no. 107,108

4. अर्थ के आधार पर वाक्य भेद) Roll number 17-22)

ENGLISH

1) Write the summary of the following lessons

i) How I taught my grandmother to read

ii) The Pot Maker

2) Write a letter to the editor of the Times of India covering any problem related to your area by giving suggestion to tackle it.

3) Write any two notices for school library and sports day.

4) Solve assignments given to you

5) Revise all syllabus done till date.
1 to 5
6) Solve unseen passage given in your English Gr. Book.
7) Collect two poems on theme nature and add illustrations.
8) Choose any character from the chapter "The Pot Maker" and prepare character sketch.
9) Prepare a 1-minute speech on your favourite character and moral value from the chapter.
10) Write descriptive paragraphs about a person you admire, a memorable event or a place you visited.
11) a) Practice daily reading by spending 10-15 minutes reading an English newspaper or a short story.
12) Write any two notices using proper format, suitable heading, date and clear information.
13) *Presentation*
Prepare a 2-3 minute Presentation on following topics using charts, pictures or creative props.
#My dream career (Roll no.1to7
#My favourite Book (8to14)
#Acountry I want to visit (15to19)
#Festivals of India
(20to22)

MATHEMATICS

Instructions
*Solve all the questions neatly.
*Draw graphs wherever required.
*Use graph paper for plotting points.
Topic 1: Identifying Coordinates
Write the coordinates of point A(3, 5).
Write the coordinates of point B(-2, 4).
Write the coordinates of point C(0, -6).
Write the coordinates of point D(-5, -3).
Write the coordinates of point E(7, 0).
Topic 2: Plotting Points on Graph Paper
Plot the point (2, 3).
Plot the point (-4, 5).
Plot the point (6, -2).
Plot the point (-3, -4).
Plot the point (0, 7).
Topic 3: Quadrants

State in which quadrant the following points lie:

(4, 6) (-5, 3) (-2, -7) (8, -1)

(0, 5)

Topic 4: Distance Between Two Points

Find the distance between the following points:

(2, 3) and (5, 7) (-1, 4) and (-1, 9) (0, 0) and (6, 8)

(-3, -2) and (4, -2) (1, 1) and (4, 5)

Topic 5: Midpoint Formula

Find the midpoint of the following line segments:

(2, 4) and (6, 8)

(-3, 5) and (7, -1)

(0, 0) and (8, 6)

(-4, -2) and (2, 4)

(5, 9) and (1, 3)

Topic 6: Collinearity of Points

Check whether the following points are collinear:

(1, 2), (2, 4), (3, 6)

(0, 0), (1, 2), (2, 5)

(-1, -2), (2, 1), (5, 4)

(3, 5), (6, 9), (9, 13)

(-2, 4), (0, 2), (2, 0)

Topic 7: Real-Life Application Problems

1. A park is located at point (4, 5) and a school at point (10, 13). Find the distance between them.
2. A straight road joins points A(2, 3) and B(8, 9). Find the midpoint.
3. Three lamp posts are located at (1, 2), (3, 4), and (5, 6). Check whether they are collinear.
4. A triangular garden has vertices at (0, 0), (8, 0), and (4, 6). Find its area.
5. A taxi moves from point (-2, 1) to point (4, 7). Find the distance travelled.
6. Topic 8-Bonus Challenge Questions
7. Plot the points (2, 2), (6, 2), (6, 6), and (2, 6). Name the figure formed.
8. Find the centroid of the triangle with vertices (0, 0), (6, 0), and (3, 9).
9. Find the distance between (-4, -3) and (4, 3).
10. Check whether the triangle formed by (1, 1), (4, 5), and (7, 9) is valid.
11. Draw and label all four quadrants with suitable points.

Topic 9 -Section A – Rational and Irrational Numbers

1)State whether the following numbers are rational or irrational:

√16

√7

-121212

.3.14
2) Is Rational numbers ,Irrational numbers
A)√49 +√81
B)2√3
3)Write any three irrational numbers between 2 and 5.
Topic 10 -Section B – Decimal Expansion
1)Find the decimal expansion of:
7/20
2)Determine whether:
13/40
Condition for terminating decimal expansion:
p/q terminates of q=2^m5^n
3)Without actual division, determine whether:
17/24
4)Write the decimal expansion of:
11/8
5)Determine whether:
21/125 is terminating or non terminating number
6)Convert: in p/Q form
a)0.375
.b)0.66666666…
Topic 11 Section C – Rational Numbers Between Two Numbers
1)Write three rational numbers between:
½ and ¾
2)Find five rational numbers between:
2 and 3
3). Write four rational numbers between:
-2/5 and 1/5
4). Find any six rational numbers between:
5/7 and 6/7
5)Write a rational number between:
√2 and √3
Topic 12-Section D – Higher Order Thinking Questions
1. Prove that √3 is irrational number
2. Show that:
5-√7 is irrational number
3) Find whether the following are rational or irrational
.101010..
2.3333..

√121

Π

Topic 13-Activity Work

Activity1) Create a colorful chart showing:

Examples of rational and irrational numbers

Terminating and non-terminating decimals

Number line representation of rational numbers

You may use diagrams, colored pens, and creative designs.

Activity 2- prepare presentation with working model on coordinate geometry

Activity 3 -measure your drawing room, write coordinate and plot it on graph

Activity 4 -Flip coin 10 times and

Find the probability of heads and tails

SOCIAL SCIENCE

Topics Covered

1. Democracy
2. Understanding Social Science
3. Shaping of Earth's Surface (Geography)
4. Atmosphere and Climate

Activity 1 – Democracy Awareness File

- Meaning of democracy
- Features of democracy
- Rights and duties of citizens
- Examples from daily life where democratic values are followed

Activity 2 – Earth Surface Model

- Mountains
- Plateaus
- Plains
- Rivers
- Types of landforms

Activity 3 – Social Observation Activity

Observe your surroundings and write about:

- Cleanliness
- Traffic discipline
- Community cooperation
- Public facilities available in your area

Activity 4 – Newspaper Reading Journal

- One national issue
- One international issue
- Your opinion in 4–5 lines.

Topics to be dictated:-

1. What is the role of the constitution ?
2. Why are elections important in a democracy ?
3. Write the merits and demerits of democracy.
4. Give the examples of Democratic and non Democratic countries.
5. How are rivers useful for us .
6. Name the important rivers to India with their tributaries .
7. Explain the different kinds of landforms in India with example.

Information *Technology**

Prepare one chart on communication skills.

Practise of Unit 3 Part B

Prepare notes of Unit 1 Part A

Learn Unit 1 Part A and Unit 3 Part B

Physics

Motion

2 Mark Questions

1. Define distance and displacement. Can displacement be greater than distance?
2. Differentiate between speed and velocity.
3. What is acceleration? Write its SI unit.
4. Define uniform motion and non-uniform motion with one example each.
5. A body travels 60 m in 12 s. Calculate its speed.
6. An object moves with a velocity of 15 m/s for 4 s. Find the distance travelled.
7. State any two differences between scalar and vector quantities.
8. Why is velocity considered a vector quantity?
9. What does the slope of a distance-time graph represent?
10. What does the area under a velocity-time graph represent?
11. A train starts from rest and attains a speed of 25 m/s in 5 s. Calculate acceleration.
12. A car moving at 20 m/s stops in 4 s. Find its retardation.
13. Define average speed. Write its formula.
14. Why can acceleration be zero even when velocity is not zero?
15. What is uniform circular motion? Is it accelerated motion? Give reason.
16. Write the three equations of motion.
17. Convert:

- 72 km/h into m/s
- 10 m/s into km/h

18. A body covers equal distances in equal intervals of time. What type of motion is this?
19. Can the displacement of a moving object be zero? Explain with an example.
20. A body moves with constant velocity. What can you say about its acceleration?
21. Differentiate between uniform speed and uniform velocity.
22. A bus travels 180 km in 4 hours. Calculate its average speed.
23. State one similarity and one difference between distance and displacement.

24. A body starts from rest and accelerates uniformly at 2 m/s² for 5 s. Find final velocity.
25. What is meant by retardation? Give one practical example.
26. Draw a velocity-time graph for an object moving with uniform velocity.
27. What type of motion is represented by a straight line parallel to time axis in a distance-time graph?
28. An athlete completes one round of a circular track. What will be:
- Distance travelled
- Displacement

29. Why is the motion of Earth around the Sun said to be accelerated motion?
30. State the conditions under which average velocity becomes equal to average speed.

Numericals (2 Marks)

1. A car travels 120 m in 8 s. Calculate its speed.
2. A boy runs with a speed of 6 m/s for 20 s. Find the distance covered.
3. A train moves with a speed of 72 km/h. Convert it into m/s.
4. Convert 15 m/s into km/h.
5. A bus starts from rest and attains a velocity of 20 m/s in 10 s. Calculate acceleration.
6. A car moving with velocity 25 m/s stops in 5 s. Find retardation.
7. An object travels 150 km in 3 hours. Calculate average speed.
8. A cyclist moving at 5 m/s covers a distance in 12 s. Find the distance travelled.
9. A body accelerates uniformly from 10 m/s to 30 m/s in 5 s. Find acceleration.
10. A train moving with velocity 54 km/h comes to rest in 15 s. Calculate acceleration.
11. A car accelerates from 18 km/h to 36 km/h in 4 s. Find acceleration.
12. An object starts from rest and accelerates at 3 m/s² for 6 s. Find final velocity.
13. A bus moving at 20 m/s travels for 15 s. Find the distance covered.
14. A body moving with velocity 8 m/s accelerates uniformly at 2 m/s² for 5 s. Find final velocity.
15. A car starts from rest and reaches 25 m/s in 5 s. Calculate acceleration.
16. An athlete runs 400 m in 50 s. Find average speed.
17. A stone falls freely for 3 s. Calculate its final velocity taking .
18. A body moving with velocity 15 m/s is brought to rest in 3 s. Find acceleration.
19. A train covers 600 m in 30 s. Calculate speed.
20. A car moving with speed 72 km/h covers distance for 10 s. Find distance travelled.
21. An object starts from rest and moves with acceleration 4 m/s² for 5 s. Find distance travelled.

Using:

22. A body moves with initial velocity 10 m/s and acceleration 2 m/s² for 5 s. Find final velocity.

Using:

23. A train moving at 20 m/s accelerates at 1 m/s² for 10 s. Calculate distance travelled.
24. A car slows down from 30 m/s to 10 m/s in 5 s. Find retardation.
25. An object travels 200 m in 25 s. Find its average speed.

5 Mark Questions

1. Define distance, displacement, speed, velocity, and acceleration with suitable examples.
2. Differentiate between:
   - Distance and displacement
   - Speed and velocity

   with examples.
3. State and derive the three equations of motion.

Important equations:

4. Draw and explain:
   - Distance-time graph for uniform motion
   - Velocity-time graph for uniformly accelerated motion.
5. Explain uniform circular motion. Why is it called accelerated motion?
6. A car starts from rest and accelerates uniformly at 2 m/s^2 for 10 s. Calculate:
   - Final velocity
   - Distance travelled

Using:

7. A train moving with velocity 20 m/s accelerates uniformly at 1 m/s^2 for 15 s. Find:
   - Final velocity
   - Distance travelled
8. A body moving with velocity 25 m/s is brought to rest in 5 s. Calculate:
   - Acceleration
   - Distance travelled before stopping.
9. Explain the terms:
   - Uniform motion
   - Non-uniform motion
   - Average speed
   - Velocity

   with suitable examples.
10. A bus travels 120 km in first 2 hours and 180 km in next 3 hours. Find:
    - Total distance
    - Average speed
11. Explain scalar and vector quantities with examples. Why is displacement a vector quantity?
12. Draw a velocity-time graph for:
    - Uniform motion
    - Uniform acceleration
    - Uniform retardation

    and explain each.
13. A cyclist moving at 8 m/s applies brakes and stops in 4 s. Calculate:

    - Retardation
    - Distance travelled before stopping.
14. Explain the significance of slope in:
    - Distance-time graph
    - Velocity-time graph.

15. A stone is dropped from the top of a building and reaches the ground in 4 s. Calculate:

- Final velocity
- Distance covered

(Take)

16. An object moves in a circular path of radius 7 m. Explain why its velocity changes continuously even if speed remains constant.
17. Derive the formula for distance travelled by a uniformly accelerated body:
18. A car accelerates from 10 m/s to 30 m/s in 5 s. Find:

- Acceleration
- Distance travelled during this interval.

19. Explain the difference between average speed and average velocity with suitable examples.
20. A body starts from rest and covers 200 m in 10 s with uniform acceleration. Find:

- Acceleration
- Final velocity.

Conceptual Questions (CBSE Type)

1. Why is displacement always shorter than or equal to distance?
2. Can a body have zero displacement but non-zero distance? Explain with example.
3. Why is velocity called a vector quantity?
4. Can an object be moving with constant speed but changing velocity? Explain.
5. Why is uniform circular motion considered accelerated motion?
6. What happens to acceleration when velocity remains constant?
7. Can acceleration be negative? What does it indicate?
8. Why is the slope of a distance-time graph important?
9. What does a horizontal line on a distance-time graph represent?
10. Why does the motion of Earth around the Sun involve acceleration?
11. Can speed of an object be zero while velocity is non-zero? Explain.
12. Can velocity of an object be zero while acceleration is non-zero? Give example.
13. Why is average speed always positive?
14. What is the difference between uniform speed and uniform velocity?
15. Why is displacement a vector quantity while distance is scalar?
16. Can an object have acceleration even if its speed is constant? Explain.
17. Why does a moving object require a reference point to describe motion?
18. What is the significance of the area under a velocity-time graph?
19. Why are the equations of motion applicable only for uniform acceleration?
20. Explain why a body moving in a straight line may still be accelerated.
21. Why is motion relative?
22. What type of motion is represented by a straight line parallel to the time axis in a velocity-time graph?
23. Why does a body moving with uniform velocity have zero acceleration?
24. Can the displacement of a body be negative? Why?
25. Why is speed never negative but velocity can be negative?
26. What happens to the distance-time graph when speed increases?
27. Why does the velocity-time graph for uniform acceleration form a straight line?

28. Can two objects have same speed but different velocities? Explain.
29. Why is acceleration considered a rate quantity?
30. How does retardation differ from acceleration?
31. Why is the SI unit of acceleration ?
32. Explain why rest and motion are relative terms.
33. What is the physical meaning of zero acceleration?
34. Why does an object moving back to its starting point have zero displacement?
35. How can a body have constant acceleration but changing velocity?
36. Why is the shortest distance between two points called displacement?

37. What happens to velocity when direction changes but speed remains same?
38. Why is velocity-time graph useful in studying motion?
39. Why is average velocity not always equal to average speed?
40. Can an object move in such a way that its average velocity becomes zero? Explain with example.

Case Study Based Questions (CBSE Pattern)

Case Study 1: Motion of a Car

A car starts from rest and moves with uniform acceleration. Its velocity becomes 20 m/s in 10 seconds.

Answer the following questions:

1. What is the initial velocity of the car?
2. Calculate the acceleration of the car.
3. Name the type of motion shown by the car.
4. What will be the velocity of the car after 5 seconds?
5. Which equation of motion is used here?

Case Study 2: Athlete on a Circular Track

An athlete runs around a circular track of radius 70 m and completes one round in 44 seconds.

1. What type of motion is performed by the athlete?
2. Is the displacement after one complete round zero?
3. Calculate the distance travelled in one round.
4. Find the speed of the athlete.
5. Why is the motion considered accelerated motion?

Case Study 3: Motion of a Train

A train moving at 54 km/h slows down uniformly and stops in 15 seconds.

1. Convert the initial velocity into m/s.
2. Calculate the acceleration of the train.
3. What type of acceleration is this called?
4. What will be the velocity after 10 seconds?
5. Draw the nature of the velocity-time graph for this motion.

Case Study 4: Distance-Time Graph

A student observes that a body covers equal distances in equal intervals of time.

1. What type of motion does the body have?
2. How will the distance-time graph look?
3. What does the slope of the graph represent?

4. Can acceleration be present in this motion?
5. Give one real-life example of such motion.

Case Study 5: Bus Journey

A bus travels 120 km in first 2 hours and 180 km in next 3 hours.

1. Calculate the total distance travelled.
2. Find the total time taken.
3. Calculate the average speed of the bus.
4. Was the motion uniform throughout the journey?
5. Define average speed.

Case Study 6: Stone Falling Freely

A stone is dropped from the top of a building and reaches the ground in 4 seconds.
(Take acceleration due to gravity)

1. What is the initial velocity of the stone?
2. Calculate the final velocity of the stone.

Using:

3. Calculate the distance travelled by the stone.

Using:

4. Name the type of motion shown by the stone.
5. Why is acceleration constant in this case?

Case Study 7: Cyclist Applying Brakes

A cyclist moving at 12 m/s applies brakes and stops in 4 seconds.

1. What is the initial velocity of the cyclist?
2. What is the final velocity?
3. Calculate the retardation of the cyclist.
4. What type of graph is obtained on a velocity-time graph?
5. Why is retardation considered negative acceleration?

Case Study 8: Motion of Earth

The Earth revolves around the Sun in a nearly circular orbit at constant speed.

1. Is the velocity of Earth constant? Why?
2. What type of motion does Earth perform?
3. Why is this motion accelerated?
4. What changes continuously in this motion?
5. Define uniform circular motion.

– Force, Balanced & Unbalanced Forces

Section B – Very Short Answer Questions (1 Mark)

1. Define force.
2. Name the SI unit of force.
3. What are balanced forces?
4. What are unbalanced forces?
5. Can force change the shape of an object?
6. Give one example of muscular force.
7. What happens when balanced forces act on a stationary object?
8. State one effect of force.
9. Which force pulls objects towards Earth?
10. What is meant by net force?

Section C – Short Answer Questions (2 Marks)

1. Differentiate between balanced and unbalanced forces.
2. State any two effects of force.
3. Explain why a book kept on a table does not move.
4. Give two examples of unbalanced forces from daily life.
5. Why does a rolling ball stop after some time?
6. How can force change the direction of motion of an object?
7. Explain with an example that force can change the shape of an object.
8. Why is force called a push or pull?

Section D – Long Answer Questions (3 Marks)

1. Explain balanced forces with a suitable example.
2. Explain unbalanced forces with a suitable example.
3. A game of tug of war is being played. Explain the situation when:

o both teams pull equally

o one team pulls harder

4. Describe three effects of force with examples.
5. Why do passengers fall backward when a moving bus suddenly starts? Explain using force and motion.

Section E – Assertion & Reason

1. Assertion: Balanced forces do not change the state of motion of an object.

Reason: Balanced forces have zero resultant force.

2. Assertion: Unbalanced forces can change the speed of an object.

Reason: Net force acting on the object is not zero.

3. Assertion: A force is needed to keep an object moving continuously.

Reason: Moving objects always stop if force is removed.

Section F – Case Study Question

Case Study 1

Ravi and Mohan are pushing a box from opposite sides with equal force. The box does not move.

1. What type of forces are acting on the box?
2. What is the resultant force on the box?
3. Will the box move? Why?
4. What happens if Ravi pushes harder than Mohan?

Case Study 2

A cyclist is riding on a straight road. Suddenly he applies brakes and the bicycle slows down and stops.

1. Which force slows down the bicycle?
2. Is the force balanced or unbalanced?
3. What effect does the force produce?
4. Name another force acting on the bicycle.

Section G – Numerical Based Questions

1. Two boys push a table in opposite directions with forces of 20 N and 20 N. Find the resultant force.

2. A force of 35 N acts on an object towards east and another force of 15 N acts towards west. Find the net force and direction.
3. Two teams pull a rope with forces 120 N and 150 N in opposite directions. Find the resultant force.
4. A cart is pushed with 50 N force while friction opposes motion with 20 N force. Calculate net force.

Section H – HOTS / Conceptual Questions
1. Why is it easier to stop a bicycle than a truck moving at the same speed?
2. Can balanced forces change the shape of an object? Explain.
3. Why does dust fall off when a carpet is beaten?
4. Why do we lean forward while starting a race?
5. Explain why an object at rest remains at rest unless acted upon by an unbalanced force

HOTS (Higher Order Thinking Skills) Conceptual Questions
A person walks 3 km north and then 4 km east. Is the distance travelled equal to displacement? Explain.
Can an object have zero velocity and still possess acceleration? Give an example.
Two cars are moving with the same speed but in opposite directions. Do they have the same velocity? Why?
Why does a body moving in a circular path continuously accelerate even if its speed remains constant?
A train moving with constant speed suddenly changes direction. Has its velocity changed? Explain.
Can the average velocity of an object be zero even when it is moving continuously? Explain with example.
A body covers half the distance at 20 km/h and remaining half at 40 km/h. Will the average speed be 30 km/h? Why?
Why is displacement considered the shortest path between two points?
An object is thrown vertically upward. At the highest point its velocity becomes zero. Is acceleration also zero? Explain.
Why can distance never be negative while displacement can be negative?
A body moves with constant acceleration. Can its speed decrease? Explain.
Can a moving object have constant speed but variable velocity? Give reason.
Why is motion said to be relative? Explain with an everyday example.
A person completes one full round of a circular park. Why is displacement zero but distance not zero?
Which quantity changes when:
only speed changes
only direction changes
both speed and direction change?
Why is the slope of a distance-time graph never negative?
A ball thrown upward returns to the ground. Compare:
Total displacement
Total distance travelled.

Why are the equations of motion not applicable for non-uniform acceleration?
A body moving with uniform velocity suddenly stops. What can you infer about its acceleration?
Why is the area under a velocity-time graph useful in finding displacement?
A car moving on a straight road takes a U-turn at constant speed. Has acceleration occurred? Why?
Why is uniform circular motion not considered uniform velocity?

A student says, "If speed is constant, acceleration must be zero." Is the statement always correct? Explain.
Why does a body moving back and forth repeatedly have low displacement but large distance?
Can displacement be greater than distance? Justify your answer.
Why does the velocity-time graph for a freely falling body become a straight line?
Explain why a stationary object can still be in motion relative to another object.
A body starts and ends at the same point after travelling a long path. What can you conclude about:
Distance
Displacement
Average velocity?
Why does a body moving with constant acceleration cover unequal distances in equal intervals of time?
Two objects move with same acceleration but different initial velocities. Will they cover equal distances in equal time? Explain.
Activity: make a model on motion or force.

Biology

Chapter: The Fundamental Unit of Life

Instructions:
Read the complete chapter carefully from NCERT.
1) Revise class notes and important definitions.
2) Write all work neatly in the science notebook.

Part A-One Word Questions

1. Who discovered the cell?
2. Which instrument is used to observe cells?
3. What is known as the "control centre" of the cell?
4. Which organelle is called the powerhouse of the cell?
5. Which cell organelle contains chlorophyll?
6. Name the jelly-like substance present inside the call.
7. Which membrane controls the movement of substances in and out of the cell?
8. Which type of cell has a cell wall?
9. What is the basic structural and functional unit of life?
10. Which organelle helps in protein synthesis?
11. Which organelle stores food and water?
12. What is the outermost covering of an animal cell?
13. Which cell organelle is responsible for digestion?

14. What is diffusion?
15. What is osmosis?
16. Which cells lack a true nucleus?
17. Which organism has prokaryotic cells?
18. Which organelle packages and transports materials?
19. Name the organelle that contains genetic material.
20. Which cell organelle helps in respiration?

Part B – One Word / Very Short Answer Questions

1. Define cell.
2. Name the scientist who discovered the nucleus.
3. What is plasma membrane?
4. Define osmosis.
5. Name the living substance of the cell.
6. What is the function of vacuoles?
7. Which organelle is known as the kitchen of the cell?
8. What are chromosomes made of?
9. Name the smallest unit of life.
10. What is cytoplasm?

Part C Assertion & Reason Questions

Choose the correct option:

(A) Both Assertion and Reason are true and Reason is the correct explanation.
(B) Both are true but Reason is not the correct explanation.
(C) Assertion is true but Reason is false.
(D) Assertion is false but Reason is true.

Assertion: Plant cells have a cell wall..
Reason: Cell wall provides rigidity and protection.
Assertion: Mitochondria are called powerhouse of the cell.
Reason: They produce energy in the form of ATP.
Assertion: Animal cells contain chloroplasts.
Reason: Chloroplasts perform photosynthesis.
Assertion: Plasma membrane is selectively permeable.
Reason: It allows only certain substances to pass through.
Assertion: Ribosomes help in protein synthesis. Reason: Ribosomes are called suicidal bags.

Part D – Diagram Practice

1. Plant Cell
2. Animal Cell
3. Nucleus
4. Prokaryotic Cell
5. Osmosis Activity Diagram

Part E- Activity Based Questions

1. Observe an onion peel under a microscope and write your observations.
2. Compare plant cell and animal cell in tabular form.

3. Prepare a chart showing functions of different cell organelles.

Part F-HOTS / Reasoning Questions

1. Why are cells called the basic unit of life?
2. Why do plant cells need a cell wall?
3. Why is the plasma membrane called selectively permeable?
4. How are diffusion and osmosis important for cells?
5. Why are mitochondria important for survival?

Complete the homework neatly and submit after the holidays.

Chemistry

Written practice work

1. Find 15 internal question from ch-5(Exploring mixture and their separation)

2. Practice the numericals of concentration calculations of solution

3. Find at least three example of each in which evaporation, filtration , centrifugation , sublimation and distillation method are used for separation of component of mixture and why?

Presentation /Activity work (For section B)

1. Draw the diagram of distillation ,sublimation, filtration

Diagram in note book.

(for section A)

Indian Scientist and their Contributions:

Students will prepare a neat handmade science file on Indian Scientists.

Include information about any 3 scientists.

For each scientist write:

1. Name of Scientist
2. Photograph or Drawing
3. Field of Science
4. Major Contribution/Discovery
5. Awards or Achievements
6. Interesting Fact
7. Inspiration/Learning from their life

Suggested Scientists

- A. P. J. Abdul Kalam
- C. V. Raman
- Vikram Sarabhai
- Homi J. Bhabha
- Jagadish Chandra Bose
- M. S. Swaminathan
- Srinivasa Ramanujan
- Or in your Exploration Book