DAV PUBLIC SCHOOL KOTA

HOLIDAY HOMEWORK

Subject : Physics

Class: IX

1. A body whose position with respect to surrounding does not change is said to be in a state of:

(a) Rest (b) Motion (c) Vibration (d) Oscillation

2. In the case of moving body

(a) Displacement > Distance (b) Displacement < Distance

(c) Displacement $\geq$ Distance (d) Displacement $\leq$ Distance

3. The value on converting km/h into m/s:

(a) 5/18 (b) 5/36 (c) 5/54 (d) 5/324

4. An object is moving in a circle of radius 'r'. Calculate the distance and displacement

(i) when it completes half the circle

(ii) when it completes one full circle.

4. A body travels a distance of 15m from A to B and then moves a distance of 20m at right angles to AB. Calculate the total distance travelled and the displacement.

5. An object travels 16m in 4s and then another 16m in 2s. What is the average speed of the object?

6. Starting from a stationary position, Bhuvan paddles his bicycle to attain a velocity of 6m/s in 30s. Then he applies brakes such that the velocity of bicycle comes down to 4m/s in the next 5s. Calculate the acceleration of the bicycle in both the cases.

7. A car traveling at 36km/hr speeds upto 70km/hr in 5 seconds. What is its acceleration? If the same car stops in 20s, what is the retardation?

8. A bus was moving with a speed of 54 km/h. On applying brakes, it stopped in 8 seconds. Calculate the acceleration and the distance travelled before stopping.

9. A car starts from rest and moves along the x-axis with constant acceleration $5 m/s^2$ for 8 seconds. If it then continues with constant velocity, what distance will the car cover in 12 seconds since it started from the rest?

Class - IX Biology

1. Investigatory Project (Choose any one):

Objective: To develop inquiry skills and apply biological concepts in real life.
Instructions: Prepare a detailed report with observations, pictures (if possible), conclusion, and learning outcomes.

- **Composting at Home:**

• Prepare a small compost pit or bin using kitchen waste.
• Record changes every week.
• Reflect on how this can reduce pollution and improve soil health.

2. Application-Based Activity:

Create a "Biology in Daily Life" Scrapbook:
• Find 10 examples of biology used in everyday life (e.g., vaccines, fermented food, GM crops, first aid, hygiene practices, organic farming).

• Paste pictures, write a small explanation for each.
• Reflect on how biological knowledge helps improve health and environment.

3. Understanding Through Art/Model:
Prepare the following:-
• 3D model of a plant or animal cell using waste/recycled materials.

4. **Concept Reinforcement Worksheet (to be completed in notebook):**
• Revise chapters: The Fundamental Unit of Life
• Prepare one chart/summary page of the chapter including diagrams, keywords, and 5 HOTS questions each.

CHEMISTRY

1) Explain effect of addition of impurity (soluble substance) on the boiling point of water with reason.
2) Take different quantity of table salt (in grams), dissolve it in fix volume of water and prepare solutions. Observe their boiling points and record your observation in a table.
3) Prepare 3D model of different states of matter.
4) Explain effect of addition of impurity (soluble substance) on the freezing point of water with reason.
5) Tabulate the freezing point of water after addition of different amount of salt in specific quantity of water.
6) Prepare Chemistry practical file and write all the experiments in your chemistry practical file related to class 9.

विषय – हिंदी

(1) "एक दिन बिना तकनीक" के विषय पर संस्मरण लेखन कीजिए।

(2). "लोगों के विचार और प्रकृति" एक संवाद लेखन और उसकी प्रस्तुति कीजिए।

(3))"दुख का अधिकार पाठ" को रंगमंचीय (लघु नाटक)प्रस्तुति में बदलना

(4) दिए गए उपसगों से चार–चार शब्द बनाएर (1) अति (2) उप (3) सम् (4) अव (5) नि

(5)दिए गए प्रत्ययों से चार–चार शब्द बनाए–

(1) आवट (२) अक्कड़ (3) ई (4) त्व (5)इक

(6)नैतिकता बनाम आधुनिकता" विषय पर वाद–विवाद प्रतियोगिता के लिए पक्ष और विपक्ष में अपने विचार लिखिए

(7)"भूतपूर्व भारत और आज का भारत" इस विषय पर आधारित अनुच्छेद।100 शब्दों में

(8)"पर्यावरण की रक्षा" विषय पर एक कविता की रचना कीजिए।

Social Science

Q1 Project file on disaster management .Choose any one of the following .

1 Terrorism 2 Nuclear attack

3 Cyber attack 4 Biological attack

Q2 Interdisciplinary project

History

Lesson -Forest Society and Colonialism

Students will conduct a research on the people who are well known for contributing towards the protection of environment. They are

1 Sundarlal Bahuguna (any one)

2 Medha Patkar

3 Chandi Prasad Bhatt

4 Rajendra Singh

Geography

Lesson-Natural vegetation and wildlife

1 Find some trees having medicinal values and write about them.

2 Find 10 occupation getting raw material from the forest and wildlife.

3 Write a poem song or a paragraph showing the importance of the forest and wildlife .

ENGLISH

1.Research a literary work, its author, and its historical context,and present your findings in a slideshow or a video.

2.Write a poem or a script based on a specific theme, using different figures of speech.

3.Make a flow chart depicting different literary devices used in the poetry,'The Brook.'

4.Create a poster promoting a cause or idea related to the main coursebook, using images and catchy slogan.

5.Write a book review of any one author of your choice;

a. Sudha Murthy

b. A.L.Tennyson

6. Frame a creative character sketch of Writer and Krishtakka of 'How I Taught My Grandmother to Read.'

DAV PUBLIC SCHOOL, TALWANDI, KOTA

CLASS - IX

Session: 2025-26

Subject: Mathematics

SUMMER HOLIDAY HOMEWORK

Instructions: Holiday Homework contains two parts

(1) Five Lab Manual Activities

(2) Case Studies

(a) Number Systems: Case study 1 and Case study 2

(b) Polynomials : Case study 3 and Case study 4

****Note: Student needs to do both in Practical Manual file for Mathematics**

PART-I PRACTICAL MANUAL ACTIVITIES

S. No.	Activity	Topic	Objective
1	Activity -1	Square roots of natural numbers	To make a square root spiral of numbers by paper folding
2	Activity -5	Coordinates and mirror image of a geometrical figure	To get the mirror image of a geometrical figure (plane) in the x-axis and the y-axis
3	Activity -6	Area of a Triangle	To find a formula for the area of a triangle.
4	Activity- 8	Area of Trapezium	To find the formula for the area of a trapezium.
5	Activity -10	Factorization of quadratic polynomials	Interpreting geometrical representation of the factorization of the quadratic polynomials as follows: (i)$p^2 + 5p + 6$ (ii) $p^2 - 4p + 4$

PART –II CASE STUDIES

CASE STUDY -1: Shalu lives in an undeveloped area where there is no facility of proper education. But one thing is available in that area i.e., network .Since she was very keen to take education, so she decided to complete her education through e-learning.

One day she was studying number system, where she learnt about rational numbers, irrational numbers and decimal numbers, etc.

On the basis of the above information, solve the following questions:

Q1. Express $12.1\,\overline{3} + \ 0.\overline{35}$ in the $\frac{p}{q}$ form, where p and q are integers, $q \neq 0$

Q2. Write one rational number and one irrational number between 2.365 and 3.125

Q3. If $x + \sqrt{2} = 3$ then find the value of $x - \frac{1}{x}$

Q4. Find the product of two irrational numbers $(7 + 3\sqrt{2})$ and $(7 - 3\sqrt{2})$

CASE STUDY -2 Ms. Tara, a Mathematics teacher explained some key points of unit 1 of class IX to his students. Some are given here.

There are infinite rational numbers between any two rational numbers.
Rationalization of a denominator means to change the irrational denominator to rational form.
A number is irrational if its decimal form is non-terminating non-recurring.
On the basis of these key points, answer the following questions:

Q1. If $\sqrt{10} = 3.162$, then find the value of $\frac{1}{\sqrt{10}}$

Q2. Simplify: $\sqrt{63} + \sqrt{28} - \sqrt{175}$

Q3. Solve the equation: $4^{x+1} = 2^{3x-1}$

Q4. If $x = 3 + \sqrt{8}$, find the value of $x^2 + \frac{1}{x^2}$

CASE STUDY-3 In the current scenario, people use such door whose top half part is made of glass and bottom half part is wooden.

The glass portion of the door is having length and width in the ratio of **5: 3**. The wooden frame around the glass portion adds 11 inches to the total width and 14 inches to the total length. Consider the length of the glass portion as **5x** inches:
On the basis of the above information, solve the following questions:

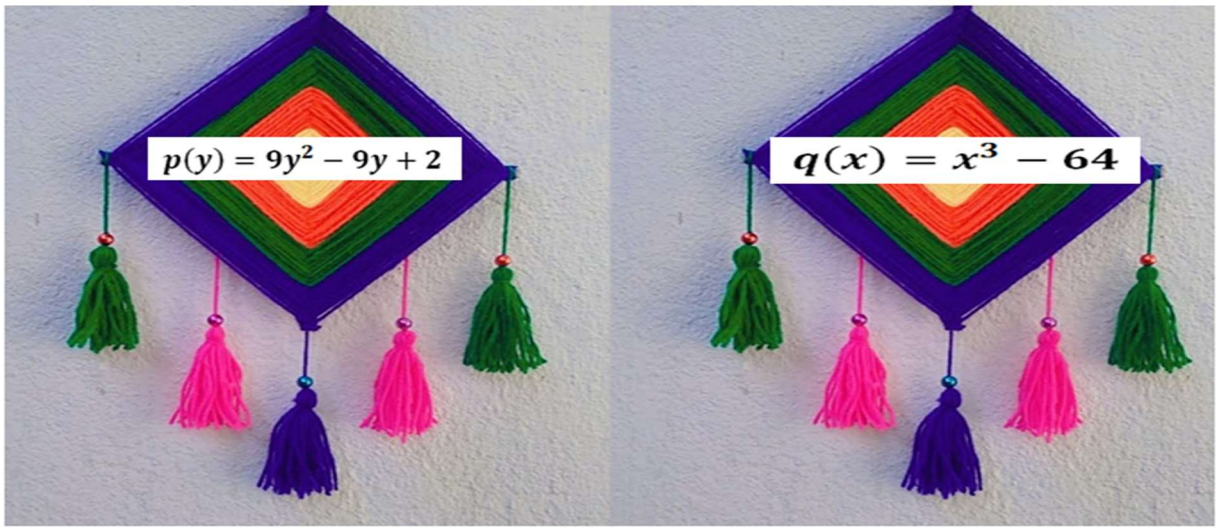
Q1. Find the total length of the door (in inches) is represented in terms of x.

Q2. Find the total width of the door (in inches).

Q3. Write the polynomial representation of the area top half part of the door.

Q4. Find the zeroes of the polynomial representing the area.

CASE STUDY -4: DAV Public School, Kota organized a mathematics exhibition in the school premises. Children of all classes made various models and games to depict the use of mathematics in daily life. To make the decoration more attractive, they made hangings related to mathematics one of the students made two hangings with polynomials written on them.



Answer the following:

Q1. Find the factors of polynomial $q(x)$ and $p(y)$

Q2. Find the value of value of $q(2)$ *and* $p(-2)$

Q3. Using suitable identities, evaluate 148×152

Q4. If $a - b = -7$ and $b = 2$, find the value of $a^3 - b^3$

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