SARASWATI WORLD SCHOOL
SESSION 2026-27
HOLIDAYS' HOMEWORK
CLASS 9

ENGLISH

Q1-Write an essay on "Importance of Time Management for Students" in about 250 words.
Q2-Read the poem The tiger in the zoo and explain its central idea and message in simple words.
Q3-Write a character sketch of Nelson Mandela based on the lesson Nelson Mandela: Long Walk to Freedom.
Q:4-Prepare a diary entry describing your most memorable day during the summer holidays.
Q:5-Make a project on any one famous English poet such as William Wordsworth or John Keats including:
Biography
Important works
Themes of poetry
Contribution to English literature

INFORMATION TECHNOLOGY

1. Draw or create a poster showing:
Roll No.
1–10 → Cyber Safety Awareness
11–20 → Computer Ethics
21–30 → Smart Classroom with Technology

31–40 → Evolution of Computers
41–So On→ Uses of Artificial Intelligence

2. Read Chapter -3,4 from book and try to highlight notes

3. Learning Task
Learn A to Z shortcut keys.
Learn full forms of:
Computer
Mouse
Keyboard
Monitor
CPU
Learn the working process of CPU.

हिंदी

ग्रीष्मावकाश की पुस्तिका अलग बनाएं

1. प्रतिदिन एक सुलेख स्पष्ट व सुंदर लिखे।
2. सूरदास व तुलसीदास जी की जीवनी A4 शीट पर लिखें याद करें।
3. निम्नलिखित विषयों पर एक निबंध लिखिए
    1. आतंकवाद एक समस्या।
    2. महापर्व–कुंभ
4. पाठ–1 वाराणसी का अनुवाद हिंदी में करें व याद करें।
5. अपनी पाठ्यपुस्तक के कोई पांच श्लोक कंठस्थ याद करें व चार्ट पेपर पर लिखें।

Class 9 Social Science Holiday Homework

Session 2026–27

Section A – History Fun

1. Draw or paste pictures of any 5 freedom fighters and write 2 lines about each.

Section B – Geography Activity

Prepare a colorful chart on any ONE topic:

- Natural Vegetation
- Climate of India
- Types of Resources
- Disaster Management

(Add drawings/pictures)

Section C – Civics Corner

Write short notes (50–60 words each) on:

1. Democracy
2. Constitution
3. Fundamental Rights
4. Elections

Section D– Map Work

On the outline map of India, mark:

- Neighboring countries
- States and capitals
- Arabian Sea
- Bay of Bengal
- Indian Ocean

Section F – Creative Task

Make a slogan/poster on any ONE topic:

- Save Water
- Clean India

- Importance of Education
- Save Environment

HOLIDAY HOMEWORK ASSIGNMENT

Class 9 | Subject: Science

Total Marks: 100 **Topics:** Is Matter Around Us Pure? & The Cell

Section A: Is Matter Around Us Pure? (50 Marks)

I. Objective Type Questions (10 Marks)

1. Which of the following is a chemical change?
   (a) Melting of ice (b) Rusting of iron (c) Dissolving salt in water (d) Boiling of water.
2. A mixture of oil and water can be separated by _____.
3. Define **Tyndall effect** with one suitable example.
4. Briefly state the difference between a homogeneous and a heterogeneous mixture.
5. Identify the **solute** and **solvent** in "Tincture of Iodine."

II. Short Answer Questions (15 Marks)

1. To make a saturated solution, 36g of sodium chloride is dissolved in 100g of water at 293K. Calculate its concentration in mass by mass percentage.
2. Differentiate between a **compound** and a **mixture** (at least 3 points).
3. Explain why air is considered a mixture and not a compound.
4. Explain the principle of centrifugation. Give two applications in daily life or industry.

III. Long Answer & Practical Based (25 Marks)

1. Describe the process of **Fractional Distillation**. Include a description of the apparatus. How does it differ from simple distillation?
2. How can we obtain pure copper sulphate from an impure sample? Explain the steps involved in **Crystallization**.

3. Classify the following as elements, compounds, or mixtures:
   Sodium, Soil, Sugar solution, Silver, Calcium carbonate, Tin, Silicon, Coal, Air, Soap.

Section B: The Fundamental Unit of Life - Cell (50 Marks)

I. Objective Type Questions (10 Marks)

1. Who discovered the free-living cells in pond water for the first time?
2. Which cell organelle is known as the **"Powerhouse of the cell"**?
3. Name the process by which water moves in and out of the cell across the membrane.
4. What is the chemical composition of a Plant Cell Wall?
5. Which cell organelle is responsible for protein synthesis?

II. Short Answer Questions (15 Marks)

1. Why is the Plasma Membrane called a **selectively permeable membrane**?
2. What happens to a cell when placed in a **Hypotonic solution**? Explain using the concept of osmosis.
3. Differentiate between **Prokaryotic** and **Eukaryotic** cells.
4. Why are Lysosomes commonly referred to as "Suicide bags"?
5. State the primary functions of the Golgi Apparatus.

III. Long Answer & Diagrammatic Questions (25 Marks)

1. Draw a neat, labeled diagram of a **Plant Cell** and an **Animal Cell**. State three major differences between them.
2. Explain the structure and functions of the **Nucleus**. Why is it called the "Brain of the cell"?
3. Describe the types of Endoplasmic Reticulum (ER). How does SER differ from RER in terms of structure and function?

General Instructions:

- Use an A4 size practical file or assignment sheets.
- All diagrams must be drawn with a sharp pencil and labeled clearly.
- Show all calculation steps for numerical problems.
- Handwriting should be neat and legible.

Wish you a productive and happy holiday!

D.A.V. PUBLIC SCHOOL, AIROLI
WORKSHEET: MATHEMATICS
CLASS: IX (2024-25)
NUMBER SYSTEM

Multiple Choice Questions

1. The product of any two irrational numbers is:
(A) always an irrational number
(B) always a rational number
(C) always an integer
(D) sometimes rational, sometimes irrational

2. The value of 1.999…. in the form $\frac{p}{q}$, where p and q are integers and q ≠0, is:
(A) $\frac{19}{10}$ (B) $\frac{1999}{1000}$ (C) 2 (D) $\frac{1}{9}$

3. $2\sqrt{3} \times \sqrt{3} + 1$ is equal to :

(A) $2\sqrt{9}$ (B) 6 (C) 7 (D) $4\sqrt{6}$

4. Between two rational numbers:
(A) there is no rational number
(B) there is exactly one rational number
(C) there are infinitely many rational numbers
(D) there are only rational numbers and no irrational numbers

5. which of the following is equal to x?

(A) $x^{\frac{12}{7}} - x^{\frac{5}{7}}$ (B) $\sqrt[12]{(x^4)^{\frac{1}{3}}}$ (C) $\left(\sqrt{x^3}\right)^{\frac{2}{3}}$ (D) $x^{\frac{12}{7}} \times x^{\frac{7}{12}}$

Short Answer Type Questions

6. Find the three rational numbers between:
(i) -1 and -2 (ii) 0.1 and 0.11 (iii) $\frac{5}{7}$ *and* $\frac{6}{7}$ (iv) $\frac{1}{4}$ *and* $\frac{1}{5}$

7. Represent geometrically the following numbers on the number line:
(i) $\sqrt{4.5}$ (ii) $\sqrt{5.6}$ (iii) $\sqrt{8.1}$ (iv) $\sqrt{2.3}$

8. Simplify $16^{\frac{-1}{4}} \times \sqrt[4]{16}$

9. Find the value of x in $3 + 2^x = (64)^{\frac{1}{2}} + (27)^{\frac{1}{3}}$.

10. If a = -2 , b = -1, then find $a^{-b} - b^a$.

Long Answer Type Questions

11. If $x = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ and $y = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$, find the value of $x^2 + y^2 + xy$.

12. If $x = \frac{2-\sqrt{5}}{2+\sqrt{5}}$ and $y = \frac{2+\sqrt{5}}{2-\sqrt{5}}$, find the value of $x^2 - y^2$.

13. Determine rational numbers p and q if
$\frac{7+\sqrt{5}}{7-\sqrt{5}} - \frac{7-\sqrt{5}}{7+\sqrt{5}} = p - 7\sqrt{5}\,q$.

14. Simplify: $\frac{6}{2\sqrt{3}-\sqrt{6}} + \frac{\sqrt{6}}{\sqrt{3}+\sqrt{2}} - \frac{4\sqrt{3}}{\sqrt{6}-\sqrt{2}}$.

15. Simplify: $\frac{3\sqrt{2}}{\sqrt{6}-\sqrt{3}} + \frac{2\sqrt{3}}{\sqrt{6}+2} - \frac{4\sqrt{3}}{\sqrt{6}-\sqrt{2}}$.

16. Show that: $\frac{1}{3-\sqrt{8}} - \frac{1}{\sqrt{8}-\sqrt{7}} + \frac{1}{\sqrt{7}-\sqrt{6}} - \frac{1}{\sqrt{6}-\sqrt{5}} + \frac{1}{\sqrt{5}-2} = 5$

17. If: $x = \frac{\sqrt{p+q}+\sqrt{p-q}}{\sqrt{p+q}-\sqrt{p-q}}$, then find the value of $qx^2 - 2px + q$.

18. Show that: $\frac{x^{-1}+y^{-1}}{x^{-1}} + \frac{x^{-1}-y^{-1}}{x^{-1}} = \frac{x^2+y^2}{xy}$

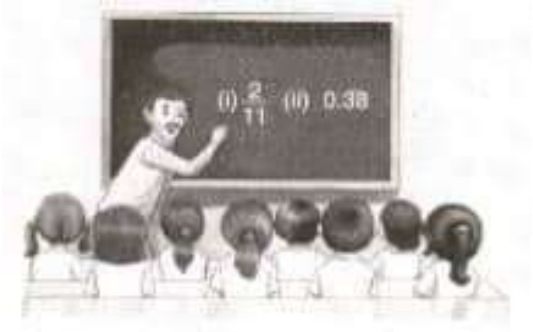
19. If $x = 2 + 3\sqrt{2}$, then find the value of $\left(x + \frac{14}{x}\right)$.

20. Find the value of a and b in the following:

(i) $\frac{5+2\sqrt{3}}{7+4\sqrt{3}} = a - b\sqrt{3}$

(ii) $\frac{\sqrt{2}+\sqrt{3}}{3\sqrt{2}-2\sqrt{3}} = a + b\sqrt{6}$

21. To judge the preparation of student's class IX on topic " Number System" Mathematics teachers write two numbers on black board (as shown in figure), and asks some questions about the members, which are following, then answer the question:



(i) Write the decimal form of 2/11
(ii) Write the p/q form of 0.38.
Write the decimal expansion of 2/11.
(iii) If p/q form of 0.38 is m/n, then find the value of (m + n)

D.A.V. PUBLIC SCHOOL, AIROLI
WORKSHEET: MATHEMATICS
CLASS: IX (2024-25)
POLYNOMIALS

Multiple Choice Questions

1. The degree of the polynomial $3x^3 - x^4 + 5x + 3\ is$:?
(A) 3 (B) – 4 (C) 4 (D) 1

2. If $p(x) = 5x^2 - 3x + 7, then\ p(1)\ equals\ to$
(A) – 10 (B) 9 (C) – 9 (D) 10

3. If $\frac{x}{y} + \frac{y}{x} = -1, (x, y \neq 0)$, then the value of $x^3 - y^3$ is
(A) 1 (B) – 1 (C) 0 (D) ½

4. The remainder when $f(x) = x^3 - 2x^2 + 6x - 2$ is divided by $(x - 2)$, is
(A) 5 (B) 8 (C) – 10 (D) 10

5. If $(x + 1)\ and\ (x - 1)$ are the factors of $f(x) = ax^3 + bx^2 + cx + d$, then
(A) a + b = 0 (B) b + c = 0 (C) b + d = 0 (D) a + d = 0

Short Answer Type Questions

6. If $f(x) = 2x^3 - 15x^2 + 15x + 2$, find f(2) and f(- 3).

7. If x = 2 is a root of the polynomial $f(x) = 2x^2 - 3x + 7a$, find the value of a.

8. Check whether the polynomial $f(x) = 4x^3 + 4x^2 - x - 1$ is a multiple of $2x + 1$.

9. If x + 1 is a factor of the polynomial $2x^2 - kx$, then find the value of k.

10. Find the coefficient of x^2 in $(x^2 - 2)^3$.

11. Find the value of (using identity only) i) $249^2 - 248^2$ ii) 95×96.

Long Answer Type Questions

12. Expand : i) $\left(\frac{1}{x} + \frac{y}{3}\right)^3$
ii) $\left(4 - \frac{1}{3x}\right)^3$

13. $x + \frac{1}{x} = 3$, find the value of $x^2 + \frac{1}{x^2}$ and $x^3 + \frac{1}{x^3}$.

14. If x – 2y =11 and xy = 8, find the value of $x^3 + 8y^3$.

15. If $p(x) = x^3 + 3x^2 - 2x + 4$, find the value of $p(-2) + p(1) + p(0)$.

16. If $a + b + c = 6$ and $ab + bc + ca = 11$, find the value of $a^3 + b^3 + c^3 - 3abc$.

17. Using identities, find the product of

    i) $(x + 1)(x - 1)(x^2 + 1)(x^4 + 1)$.

    ii) $\left(x - \frac{y}{5} - 1\right)\left(x + \frac{y}{5} - 1\right)$.

18. Rationalise the denominator and simplify:

$$\frac{2\sqrt{6}-\sqrt{5}}{3\sqrt{5}-2\sqrt{6}}$$

19. Simplify

$$\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}} + \frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}}.$$

20. Find the value of $\frac{6}{\sqrt{5}-\sqrt{3}}$, it being given that $\sqrt{3} = 1.732$ *and* $\sqrt{5} = 2.236$.

21. On one day, principal of a particular school visited the classroom. Class teacher was teaching the concept of polynomial to students. He was very much impressed by her way of teaching. To check, whether the students also understand the concept taught by her or not, he asked various questions to students. Some of them are given below. Answer them.

    i) Find the value of a, when x +1 is a factor of $x^3 - 2ax^2 + 16$.
    ii) Find the value of k, when x – 1 is a factor of $4x^3 - 3x^2 - 4x + k$.
    iii) How many zeroes are there in the polynomial $x^2 + 4x + 2$.