

ST. NICHOLAS PUBLIC SCHOOL

HOLIDAY HOMEWORK

STD-9

Sub:- ENGLISH

1. Read the summary of the book 'Wings of Fire' by APJ Abdul Kalam and write a book review with your personal opinion in A4 page.
2. Make a list of at least 10 literary devices and cite examples from the poems present in your syllabus.
3. Read all the chapters for periodic test 1 and revise the questions and answers.
4. Make a list of 50 phrasal verbs with examples in A4 pages.

Sub:-BENGALI

- স্বরসন্ধি সূত্র গুলির উপর একটি চার্ট প্রস্তুত করো এবং সেই সূত্রগুলি সঙ্গে পাঁচটি করে উদাহরণ দাও।
- যেকোনো একদিন এর কথাবার্তায় কতগুলো-নির্দেশক, প্রশ্নবোধক, অনুজ্ঞাসূচক, বাক্য রয়েছে তা বাক্যগুলি উল্লেখ করে লেখ।

Sub:-SCIENCE

Chemistry -

- 1)With the help of an example, explain how diffusion of gases in water is essential?
- 2)Name the factors that affect evaporation.
- 3)Why is it advisable to use pressure cooker at higher altitudes?
- 4)Why are solids generally denser than liquids and gases?
- 5)Why do we feel cool when we touch a piece of ice?
- 6)What are the characteristics of matter?

7) Camphor disappears without leaving any residue. Explain?

8) How can you show that evaporation causes cooling?

9) Arrange the following in increasing order of force of attraction between the particles.

Fog, Gold, Honey, Milk.

Biology-

1. If the organisation of a cell is destroyed due to some physical or chemical influence, what will happen?

2. Why are lysosomes known as suicide bags?

3. What would happen if the plasma membrane ruptures or breaks down?

4. What would happen to the life of a cell if there was no Golgi apparatus?

5. Which organelle is known as the powerhouse of the cell? Why?

6. Where do the lipids and proteins constituting the cell membrane get synthesised?

7. How do substances like CO₂ and water move in and out of the cell? Discuss.

8. Make a comparison and write down ways in which plant cells are different from animal cells.

9. How is a prokaryotic cell different from a eukaryotic cell?

10. What is osmosis?

Physics-

1. A body covers one-third of its journey with speed 'u', next one-third with speed 'v' and the last one-third with speed 'w'. Calculate the average speed of the body during the entire journey.

2. Define the following terms: Uniform speed, Uniform velocity, Uniform acceleration, Average speed, Average velocity, Average acceleration, Instantaneous speed, Instantaneous velocity, Instantaneous acceleration, Negative acceleration.

3. Derive the following equations of motion for an object moving with constant acceleration along a straight line:

4. Discuss the motion under free fall. Write the equations of motion for a freely falling body.

5. Draw the velocity-time graph for an object in uniform motion. Show that the area under the velocity-time graph gives the displacement of the object in the given time interval.

Sub:-SOCIAL SCIENCE

Project : Multi Disciplinary project

Western Ghats and its impact on Indian Climate, modern economy, and tour & tourism.

Prepare a project involving all the subjects Scientifically.

- ❖ Revise all the completed chapters. Learn the question answers.
- ❖ Write the answers of the following questions in A4 papers.

1. Describe rise of Napoleon.
2. Evaluate the role of women in France before the revolution.
3. Explain the triangular slave trade carried on during 18th and 19th century.
4. Draw up a list of democratic rights we enjoy today whose origins could be traced to the French Revolution.
5. Imagine that a meeting has been called in your area to discuss the socialist idea of doing away with private property and introducing collective ownership. Write the speech you would make at the meeting if you are -
 - i. A poor labour working in the fields.
 - ii. A medium labour working in his own field.
 - iii. A person work in collective field.
6. What does Production means? Explain it's factors.
7. Differentiate between farming and non farming activity?
8. Distinguish between converging and Diverging plates.
9. Distinguish between eastern ghat and western ghat.
10. Democracy is based on free and fair elections. Comment on it.
11. Describe argument against Democracy.
12. Prepare a PowerPoint presentation on the following topic. (any one)
 - A) The Himalayan range .
 - B) Constitution of India.
13. prepare a file project on the following topic. (any one)
 - A) Green Revolution.
 - B) Economy of the hypothetical village Palampur.

14. On Indian outline map point the following

- a) K2 b) Aravalli Range c) vindhya Range d) western Ghats e) AnaiMudi.

Sub:-Mathematics

NUMBER SYSTEM

- Define rational numbers with examples.
- Find 4 rational numbers between $\frac{3}{4}$ and $\frac{5}{6}$.
- Locate $\sqrt{3}$ and $\sqrt{5}$ separately on the number line.
- 2.348 on the number line using successive magnification.
- Simplify each of the following:
 - $(625)^{\frac{-1}{4}}$
 - $(\frac{256}{81})^{\frac{5}{4}}$
 - $(\frac{243}{32})^{\frac{-4}{5}}$
 - $5\sqrt{(32)^{-3}}$
- Simplify: $[\{(625)^{\frac{-1}{2}}\}^{\frac{-1}{4}}]^2$
- If $27^x = \frac{9}{3^x}$, find x.
- Simplify the following expressions:
 - $(11 + \sqrt{11})(11 - \sqrt{11})$
 - $(3 + \sqrt{3})(5 - \sqrt{2})$
 - $(\sqrt{5} - 2)(\sqrt{3} - \sqrt{5})$
 - $(\sqrt{3} + \sqrt{5})^2$
 - $(2\sqrt{5} + 3\sqrt{2})^2$
 - $(4 + \sqrt{7})(3 + \sqrt{2})$
- Rationalise the denominators:
 - $\frac{1}{3+\sqrt{5}}$
 - $\frac{3\sqrt{2}}{\sqrt{5}}$
 - $\frac{16}{\sqrt{41}-6}$
 - $\frac{1}{2\sqrt{5}-\sqrt{3}}$
 - $\frac{3\sqrt{2}+1}{2\sqrt{5}-3}$
 - $\frac{2\sqrt{6}-\sqrt{5}}{3\sqrt{5}-2\sqrt{6}}$
 - $\frac{1+\sqrt{2}}{3-2\sqrt{2}}$
- Simplify :
 - $\frac{1}{2+\sqrt{3}} + \frac{1}{\sqrt{5}-\sqrt{3}} + \frac{1}{2-\sqrt{5}}$
 - $\frac{2}{\sqrt{5}+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{2}} + \frac{1}{2-\sqrt{5}}$
 - $\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}} + \frac{\sqrt{5}-\sqrt{3}}{\sqrt{5}+\sqrt{3}}$
- If $\frac{4+\sqrt{2}}{2+\sqrt{2}} = a - \sqrt{b}$, then find the value of a and b.
- If $\frac{5+3\sqrt{3}}{7+4\sqrt{3}} = a + b\sqrt{3}$, then find the value of a and b.
- If $x = 3 + \sqrt{8}$, find the value of $x^2 + \frac{1}{x^2}$.
- Represent $\sqrt{7.8}$ on the number line.
- Represent $\sqrt{8.9}$ on the number line.

POLYNOMIALS

16. If $P(x) = 2x^3 - 13x^2 + 17x + 12$, find (i) $P(2)$ (ii) $P(-3)$ (iii) $P(0)$
17. Verify whether $x=1, 2, 3$ are the factors of $P(x) = x^3 - 6x^2 + 11x - 6$
18. If $x = 2$ is a root of the polynomial $P(x) = 2x^2 - 3x + 7a$, find the value of a .
19. In the following cases using Remainder Theorem, find the remainder when $f(x)$ is divided by $g(x)$:
- (i) $f(x) = x^3 + 4x^2 - 3x + 10$ and $g(x) = x + 4$
 - (ii) $f(x) = 4x^3 - 3x^3 - 2x^2 + x - 7$ and $g(x) = x - 1$
 - (iii) $f(x) = x^3 - 6x^2 + 2x - 4$ and $g(x) = 1 - 2x$
 - (iv) $f(x) = 9x^3 - 3x^2 + x - 5$ and $g(x) = x - \frac{2}{3}$
20. If the polynomial $2x^3 + ax^2 + 3x - 5$ and $x^3 + x^2 - 4x + a$ leave the same remainder when divided by $(x - 2)$, find the value of a .
21. Find the remainder when $x^3 + 3x^2 + 3x + 1$ is divided by
- (i) $\left(x - \frac{1}{2}\right)$
 - (ii) $(5 + 2x)$
22. Check whether $g(x) = 3x - 2$ is a factor of $f(x) = 3x^3 + x^2 - 20x + 12$
23. Find the value of k if $(x - 3)$ is a factor of $k^2x^3 - kx^2 + 3kx - k$.
24. Using factor theorem Factorise:
- (i) $3x^3 - x^2 - 3x + 1$
 - (ii) $x^3 - 23x^2 + 142x - 120$
25. Evaluate: (i) $\left(2x - \frac{1}{x}\right)^2$ (ii) $(a^2b - b^2a)^2$ (iii) $\left(3x - \frac{1}{3x}\right)^2$

Coordinate Geometry and Linear equation in Two Variables:

26. Plot the following points on the graph paper:
 $A(-3,4), B(5,6), C(-5,3), D(4,-5), E(0,5), F(-9,0),$
 $G(-4,-7), H(7,2), I(4,-8)$
27. Draw the graph of the following equations in graph paper:
- (i) $x - 2y - 6 = 0$
 - (ii) $3x + y = 6$
 - (iii) $2x - 3y = 12$
 - (iv) $3x - 4y = 15$
 - (v) $x = 5 = 0$
 - (vi) $y - 3 = 0$