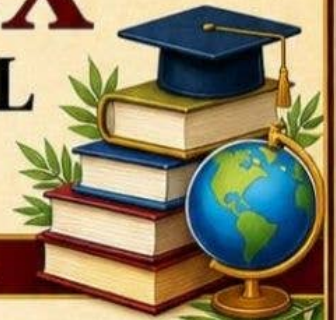




NORTH-EX[®] PUBLIC SCHOOL — DELHI —



Established 1999 | CBSE Curriculum | Holistic Development



SUMMER HOLIDAY HOMEWORK

Session 2026–2027



Student Name : _____



Class : _____



Section : _____



Class Teacher : _____



Explore, Learn & Grow this Summer!



OUR THREE BRANCHES - ROHINI, DELHI

SECTOR-38, ROHINI



Spacious campus with modern infrastructure & senior secondary facilities.

SECTOR-3, ROHINI



Recognised branch with strong academic foundation & disciplined environment.

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Senior Secondary CBSE affiliated campus with advanced learning spaces.

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CLASSROOMS



WELL EQUIPPED
SCIENCE
LABS



COMPUTER &
IT LABS



LIBRARY &
RESOURCE
CENTRE



SPORTS &
OUTDOOR
ACTIVITIES



CO-CURRICULAR
ACTIVITIES
(ART, MUSIC, DANCE)



SAFE & SECURE
CAMPUS
(CCTV)



Complete your work neatly and submit on time.



NORTH-EX PUBLIC SCHOOL
(Senior Secondary, Affiliated To CBSE)
School Block, Jain Nagar, Sector-38, Rohini, Delhi – 81
SUMMER HOLIDAY HOMEWORK, 2026-27
CLASS –NOBLE XI

General Instructions:

- Learn and revise the syllabus of Periodic Test -1.
- Do your project work neatly.
- Holiday homework should be done in the test register or according to the requirement mentioned.
- Do your work as per the elective subjects

WEEK – 1

MATHEMATICS

1. Evaluate $\frac{i^{592}+i^{590}+i^{588}+i^{586}+i^{584}}{i^{582}+i^{580}+i^{578}+i^{576}+i^{574}}$.
2. Find the real values of x and y, if $(1+i)(x+iy)=2-5i$.

PHYSICAL EDUCATION

1. Define physical education. What are the aims and objectives of physical education?
2. Describe the career options in physical education.

BIOLOGY

Q. 1. Define and understand the following terms:

(i) Phylum (ii) Class (iii) Family (iv) Order (v) Genus

Q. 2. Activity:-

Collect any 10 fruits and 10 plants near by you and written their scientific names.

CHEMISTRY

1. What is the S.I. unit of mass? Write its symbol.
2. What are the reference points in thermometer with Celsius scale?

PHYSICS

1. A thin wire has a length of 21.7 cm and radius 0.46 mm. Calculate the volume of the wire to correct significant figures.
2. The frequency (f) of a stretched string depends upon the tension F (dimensions of force), length l of the string and the mass per unit length λ of string. Derive the formula for frequency.

ENGLISH

1. Draft a poster on 'Save the Girl Child, Save the Nation' campaign that has been started by the Delhi Commission for Women. (Use A-4 size sheet)

2. "Think back over your past seven days of your summer vacation.

In your best **cursive handwriting**, write a diary entry (approx. 120–150 words) week wise describing how you spent your week.

Include the following:

- Where did you go and what were your main activities?
- Describe one thing you saw, heard, or felt that made the week memorable.
- How does these moments change the way you look back on your week?"

WEEK – 2

MATHEMATICS

1. Solve : $|x - 2| \geq 5$.
2. Solve; $1 \leq |x - 2| \leq 3$.

PHYSICAL EDUCATION

1. Can a physical education graduate justify the job of sports administrator? Explain with suitable examples.
2. After completion of any professional course in physical education, how many career options will you have?

BIOLOGY

- Q. 1. Give a brief account of viruses with respect to their structure and nature of genetic material. Also name four common viral diseases.
- Q. 2. State two economically important uses of:
- (a) heterotrophic bacteria
 - (b) archaeobacteria

CHEMISTRY

1. Calculate the amount of carbon dioxide that could be produced when
 - i. 1 mole of carbon is burnt in air.
 - ii. 1 mole of carbon is burnt in 16 g of dioxygen.
 - iii. 2 moles of carbon are burnt in 16 g of dioxygen.
2. What do you mean by significant figures?

PHYSICS

1. The energy E of an oscillating body in simple harmonic motion depends on its mass m , frequency n and amplitude a . Using the method of dimensional analysis find the relation between E , m , n and a .
2. A ball is thrown upwards from the top of a tower 40 m high with a velocity of 10 m/s. Find the time when it strikes the ground. Take $g = 10 \text{ m/s}^2$.

ENGLISH

1. Write a speech on the topic 'Is peer pressure beneficial or not?' to be delivered on account of Children Day celebration in your school.
2. "Think back over your past seven days of your summer vacation.

In your best **cursive handwriting**, write a diary entry (approx. 120–150 words) **week wise** describing how you spent your week.

WEEK – 3

MATHEMATICS

1. If $(a+ib)(c+id)(e+if)(g+ih) = A + iB$, prove that

$$(a^2 + b^2)(c^2 + d^2)(e^2 + f^2)(g^2 + h^2) = A^2 + B^2.$$

2. Express the following expression in the form of $a + ib$.

$$\frac{(3 + \sqrt{5}i)(3 - \sqrt{5}i)}{(\sqrt{3} + \sqrt{2}i) - (\sqrt{3} - \sqrt{2}i)}$$

PHYSICAL EDUCATION

1. How many different kinds of courses and careers in physical education are available in India?
2. Describe International Olympic Committee (IOC).

BIOLOGY

Q. 1. Give a brief account of kingdoms of:

- (a) monera
- (b) protista
- (c) fungi
- (d) plant
- (e) animal

Q. 2. Difference between gymnosperms and angiosperms with examples.

CHEMISTRY

1. A vessel contains 1.6 g of dioxygen at STP (273.15K, 1 atm pressure). The gas is now transferred to another vessel at constant temperature, where pressure becomes half of the original pressure. Calculate
 - a. volume of the new vessel.
 - b. number of molecules of dioxygen
2. 250 ml of 0.5 sodium sulphate (Na_2SO_4) solution are added to an aqueous solution containing 10.0 g of BaCl_2 , resulting in the formation of white precipitate of BaSO_4 . How many moles and how many grams of barium sulphate will be obtained?

PHYSICS

1. A ball is thrown upwards from the ground with an initial speed of u . The ball is at a height of 80 m at two times, the time interval being 6 s. Find u . Take $g = 10 \text{ m/s}^2$.
2. A particle is projected vertically upwards with velocity 40 m/s. Find the displacement and distance travelled by the particle in (a) 2 s (b) 4 s (c) 6 s. Take $g = 10 \text{ m/s}^2$.
3. A particle is moving in a circle of radius 4 cm with constant speed of 1cm/s. Find
 - (a) time period of the particle and
 - (b) average speed, average velocity and average acceleration in a time interval from $t = 0$ to $t = T/4$. Here, T is the time period of the particle. Give only their magnitudes.

ENGLISH

1. Identify the poetic devices used in the poem, “A Photograph” and discuss their meanings.
2. Human life is short-lived in contrast to nature. Comment on the statement in the light of the poem ‘A Photograph’.
3. "Think back over your past seven days of your summer vacation.

In your best **cursive handwriting**, write a diary entry (approx. 120–150 words) week wise describing how you spent your week.

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WEEK – 4

MATHEMATICS

1. Solve the inequality $5(2x - 7) - 3(2x + 3) \leq 0$, $2x + 19 \leq 6x + 47$.
2. Write the set $\left\{\frac{1}{3}, \frac{3}{5}, \frac{5}{7}, \frac{7}{9}, \frac{9}{11}, \frac{11}{13}\right\}$ in set builder form.

PHYSICAL EDUCATION

1. Describe IFS and Other Members.
2. What values are promoted by organising the Olympic event?

BIOLOGY

Q. 1. Difference between the following:-

- (1) red algae & brown algae
- (2) liverworts & moss
- (3) homosporous & heterosporous pteridophyte

Q. 2. Explain the following terms:

- (1) protonema
- (2) antheridium
- (3) archegonium
- (4) diplontic
- (5) sporophyll
- (6) isogamy

CHEMISTRY

1. Out of the electron and proton which one will have, a higher velocity to produce matter waves of the same wavelength? Explain it.
2. Which two discoveries put a strong challenge to the Bohr model?

PHYSICS

1. A particle starts with an initial velocity 2.5 m/s along the positive x-direction and it accelerates uniformly at the rate 0.50 m/s^2 .
 - (a) Find the distance travelled by it in the first two seconds
 - (b) How much time does it take to reach the velocity 7.5 m/s?
 - (c) How much distance will it cover in reaching the velocity 7.5 m/s?
2. Displacement-time equation of a particle moving along x-axis is $x = 20 + t^3 - 12t$ (SI units)
 - (a) Find, position and velocity of particle at time $t = 0$.
 - (b) State whether the motion is uniformly accelerated or not.
 - (c) Find position of particle when velocity of particle is zero.
3. A clock has its second hand 2.0 cm long. Find the average speed and modulus of average velocity of the tip of the second hand in 15 s.

ENGLISH

1. Can the act of stealing be ever justified? Give your views in the context of reading of 'The Summer of the Beautiful White Horse'.
2. "Think back over your past seven days of your summer vacation.

In your best **cursive handwriting**, write a diary entry (approx. 120–150 words) week wise describing how you spent your week.

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WEEK – 5

MATHEMATICS

- If $U=\{1,2,3,4,5,6,7,8,9\}$ $A=\{2,4,6,8\}$ $B=\{2,3,5,7\}$, verify that i) $(A \cup B)' = A' \cap B'$
ii) $(A \cap B)' = A' \cup B'$
- Let $A=\{1,2\}$, $B=\{1,2,3,4\}$, $C=\{5,6\}$, $D=\{5,6,7,8\}$ verify that $A \times (B \cap C) = (A \times B) \cap (A \times C)$.
- If A and B are two given sets, then represent the set using venn diagram
 - $(A-B)'$
 - $(A \cap B)'$

PHYSICAL EDUCATION

- What are the objectives / functions of International Olympic Committee (IOC)?
- What are the functions / objectives of National Olympic Committee (NOC)?

BIOLOGY

Q. 1. summary of:

- Porifera
- Ctenophora
- Echinodermata
- Chordata
- Platyhelminthes
- Aschelminthes
- Annelida
- Arthropoda

Q. 2. "All vertebrates are chordates but all chordates are not vertebrates".

Justify the statement.

CHEMISTRY

- In Rutherford's experiment, generally, the thin foil of heavy atoms, like gold, platinum, etc., have been used to be bombarded by the α - particles. If the thin foil of light atoms like aluminium, etc., is used, what difference would be observed from the above results?
- The unpaired electrons in Al and Si are present in 3p orbital. Which electrons were experience more effective nuclear charge from the nucleus?

PHYSICS

- The motion of a particle along a straight line is described by the function $x = (2t - 3)^2$, where x is in metres and t is in seconds. Find
 - the position, velocity and acceleration at $t = 2$ s.
 - the velocity of the particle at origin.
- A ball is projected vertically upward with a speed of 50 m/s. Find
 - the maximum height,

- (b) the time to reach the maximum height,
(c) the speed at half the maximum height. Take $g = 10 \text{ ms}^{-2}$.

ENGLISH

1. Discuss the values highlighted in the chapter, “The Portrait of a Lady”.
2. You have a DDA flat in Rohini and want to give it on rent. Draft an advertisement for a local daily giving the necessary details.
3. "Think back over your past seven days of your summer vacation.

In your best **cursive handwriting**, write a diary entry (approx. 120–150 words) week wise describing how you spent your week.

PROJECT WORK

Roll No	Subject	Project	Roll No	Subject	Project
1-10	Chemistry	Study of the methods of purification of water	1-30	Maths	Activity1: Finding number of subsets of a given set. Activity3: To represent set theoretic operations using venn Diagrams. Activity5: To distinguish between a relation and a function.
	Phy Ed	Khelo india program			
	Physics	Investigate how adding detergent reduces the surface tension of water, often measured by capillary rise.			
11-20	Chemistry	Study of acidity of fruit and vegetable juices	1-30	Biology	Chart on life cycle of Angiosperm, Classification of Animal Kingdom, layers in animals. Collect different type of leaves and Flowers (Minimum 20) Make herbarium file in herbarium sheet with details.
	Phy Ed	Fit-India program			
	Physics	Explore factors influencing the angular velocity and inertia of rotating objects.			
21 -30	Chemistry	Study of the methods of purification of water	1-30	English	Make a project file based on any chapter or poetry from the Book Hornbill and Snapshots (Done till now)
	Phy Ed	Olympics Symbols and Motto Or Olympics Flag, Oath and Anthem			
	Physics	Experiment with balancing irregular objects, such as a fork, spoon, and toothpick setup, to study the center of gravity.			

WORKING MODELS (only one as per the interest)

Roll No.	Subject	Suggested topics
7,11,26	Physics Or Chemistry Or Biology	Pascal's Law Or Electrolysis of water Or Animal cell
8,12,27	Physics Or Chemistry Or Biology	Bernoulli's Theorem Or Water quality checker Or Plant cell
9,13,28	Physics Or Chemistry Or Biology	Oscillations and waves Or Atomic structure(model) Or Human digestive system
10,14,29	Physics Or Chemistry Or Biology	Friction Or Lemon battery experiment Or Human respiratory system
1,15,30	Physics Or Chemistry Or Biology	Mechanical properties of solids(application of elasticity) Or Cathode ray tube Or Human excretory system
2,16,21	Physics Or Chemistry Or Biology	Thermal properties of matter Or Electroplating Or Human brain
3,17,22	Physics Or Chemistry Or Biology	Gravitation Or Purification of H ₂ O Or Human heart
4,18,23	Physics Or Chemistry Or Biology	System of Particles and Rotational Motion Or Periodic table Or Hemodialysis working model
5,19,24	Physics	Work and Energy

	Or Chemistry Or Biology	Or pH, hardness, turbidity Or Human eye
6,20,25	Physics Or Chemistry Or Biology	Laws of motion Or Acid – Base reaction Or Human ear

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