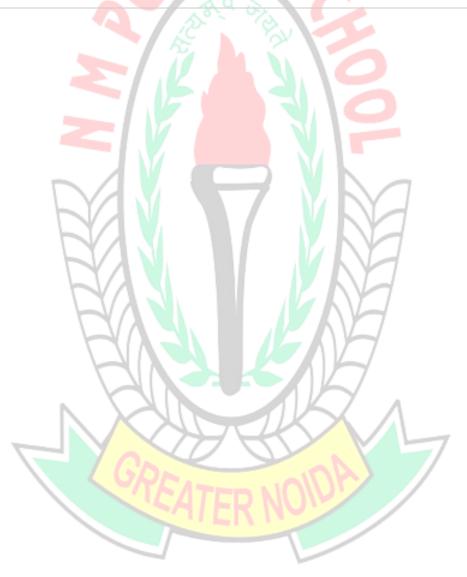# N M PUBLIC SCHOOL

Holiday Homework
Session -2023-24
Class- IX

PHYSICS	Do all questions of chapter 8 and 9 in your note book. Prepare a project on any topic related to application of newton's law of Motion .
SOCIAL SCIENCE	1- Prepare 20 objective (1 mark) questions each from these five chapters: French Revolution, India Size and Location, What is Democracy, Why Democracy Story of Village Palampur Physical features of India 2- Prepare map work from these chapters- 1: India Size and Location: 1) The island groups of India lying in the Arabian sea and the Bay of Bengal, 2) The countries constituting Indian Subcontinent, 3) The states through which the Tropic of Cancer passes, 4) The strait separating Sri Lanka from India, 5) The place situated on the three seas. 2: Physical features of India: Mountain Ranges: The Karakoram, The Zaskar, The Patkai Bum, The Jaintia, The Vindhya Range, The Aravali, The Cardamon hills, The Indian desert, The western Ghats. Peaks: K2, Kanchenjunga, Nanga Parbat, Anai Mudi, Mahendragiri. 4- Revise and learn the questions and topics from the chapters completed till now. 5- Prepare a file on Disaster Management taking any one of the following topic: 1- Flood, 2- Drought, 3- Earthquake, 4- Industrial Accidents
ENGLISH	1.Write an article in 100-120 words on the 'Mystery Of Bermuda Triangle' 2.Write a bio-sketch on doctor APJ Abdul Kalam. . Birth . Education . Awards and achievement 3. Write a factual description on an event (tree plantation) . Day/Date / Venue. . Occasion . Chief guest 4.Make a portfolio in English . Introduction . Index . Why I like English subject? . Books (Moment, Beehive) . Your performance in class test. . Activities . Conclusion
HINDI	प्रश्न 1 निम्नलिखित में से किसी एक विषय पर दिए गए संकेत बिंदु के आधार पर लगभग 80 से 100 शब्दों में एक अनुच्छेद लिखिए। परंपरा संस्कृति की वाहक ,टीवी रियलिटी शो का समाज पर प्रभाव, वृक्षारोपण का महत्व प्रश्न 2 जीवन में आगे बढ़ने के लिए भाग्य और परिश्रम में से आप किस को अधिक महत्व देंगे। इस विषय पर (150 शब्दों में) लघु कथा लिखिए। प्रश्न 3 भविष्य के निर्माण में हमें अतीत में जीना चाहिए या वर्तमान में इस विषय पर दो मित्रों के बीच संवाद लिखिए। प्रश्न 4 हिंदी में दिए गए परियोजना कार्य को फाइल में लिखिए।
BIOLOGY	1. Write the contribution of the following in the study of the cell (a) Robert Hooke (b) Purkinje (c) Lewin hock (d) Robert brown (e) Schleiden and Schwann. 2. Write note on fundamental unit of life. 3. Write are the main function of each of the following components (1) plasma membrane (2)

	Mitochondria (3) Nucleus (4) Ribosomes 4. What are the different types of Endoplasmic Reticulum write the function of each. 5. Draw the 3D diagrams various type of cells present in human body. 6. Make a 3D model of Mitochondria and label its parts.
CHEMISTRY	NOTE- Work should be neat and clean. 1. To prepare a power point presentation of anyone chapter a) Matter in our surroundings (even roll no.) b) Is matter around us pure. (odd roll no.) 2. Write and learn thirty element's name with their a) Symbols b) Atomic no. c) Atomic mass d) Valency 3. Write and learn fifty chemical formulae with their chemical name. 4. Do complete and practice of subject work.
MATHEMATICS	DO THE WORKSHEET ATTACHED

SECTION-A

1. Write the degree of the given polynomials :
    i) $(2x + 4)^3$
    ii) $(t^3 + 4) (t^3 + 9)$
2. Write the coefficient of x^4 and x in $4x^3 -5x^4 +2x^2 + 3$.
3. Find the zeroes of $f(z)=z^2 - 2z$.
4. Find the product using suitable identities: $(4 +5x)(4-5x)$.
5. What is the value of k in polynomial $x^2 + 8x + k$, if -1 is a zero of the polynomial?

SECTION-B
6. Show that x + 1 and 2x -3 are factors o f $2x^3 - 9x^2 + x + 12$.
7. If $a^2 + b^2 + c^2 = 20$ and a + b + c = 0 , find ab + bc + ca.
8. If $9x^2 + 25y^2 = 181$ and xy = -6, find the value o f 3x + 5y.
9. Evaluate using identities:
    i) $\frac{7.83 \text{ x } 7.83 - 1.17 \text{ x } 1.17}{6.66}$
    ii) $29^3 - 11^3$
10. Simplify: $(x^2 + y^2 - z^2)^2 - (x^2 - y^2 + z^2)^2$

SECTION-C
11. Evaluate using identities:
    i) $(0.99)^2$
    ii)   117 x 83
    iii) $(a^2b -b^2a)^2$
12. Simplify :
    $$\frac{(a^2-b^2)^3 + (b^2-c^2)^3+(c^2-a^2)^3}{(a-b)^3+(b-c)^3+(c-a)^3}$$
13. Let P and Q be the remainders when the polynomials $x^3 + 2x^2 -5ax -7$ and $x^3 + ax^2 -12x + 6$ are divided by x+1 and x-2 respectively. If 2P + Q = 6, find the value of a.
14. If $f(x) = 5x^2 – 4x + 5$, find f(1) + f(-1) + f(0).
15. By remainder theorem, find the remainder when p(y) is divided by g(y)
    i) $p(y) = 4y^3 – 12y^2 + 5y – 4$ and $g(y) = 2y – 1$
    ii) $p(y) = y^3 – 4y^2 -2y + 6$ and $g(y) = 1 - \frac{3}{4}y$.

SECTION-D

16. Factorise:

   i) $2x^2 - \dfrac{5}{6}x + \dfrac{1}{12}$ ii) $a^3 - 0.216$

    iii) $a^3 - \dfrac{1}{a^3} - 2a + \dfrac{2}{a}$ iv) $x^3 - 12x(x-4) - 64$

17. Factorise each of the following polynomials:
   i) $x^3 + 13x^2 + 31x - 45$ given that $x + 9$ is a factor.
   ii) $4x^3 + 20x^2 + 33x + 18$ given that $2x + 3$ is a factor.

18. Let R_1 & R_2 are the remainders when the polynomials $f(x) = 4x^3 + 3x^2 - 12ax - 5$
   and $g(x) = 2x^3 + ax^2 - 6x - 2$ are divided by $(x-1)$ and $(x-2)$ respectively.
   If $3R_1 + R_2 - 28 = 0$, find the value of a.

19. If $2x + 3y = 12$ and $xy = 6$, find the value of $8x^3 + 27y^3$.

20. i) Simplify: $\dfrac{1}{1 + x^{b-a} + x^{c-a}} + \dfrac{1}{1 + x^{a-b} + x^{c-b}} + \dfrac{1}{1 + x^{a-c} + x^{b-c}}$

   ii) Factorise: a) $25x^2 + 16y^2 + 4z^2 - 40xy + 16yz - 20xz$.
             b) $2\sqrt{2}a^3 + 8b^3 - 27c^3 + 18\sqrt{2}abc$.

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