NEW ERA PUBLIC SCHOOL, PATNA

(Affiliated to CBSE, Delhi, Upto 10+2 Level)

Summer Vacation Homework (2025-26)

CLASS – XI Science

Subject	HOMEWORKS
Chemistry	Solve all ncert exercise and intex problems of Some basic conceptof Chemistry and complete it's notes also.
Biology	Project:- Collect different type of leaves (minimum 15) make herbarium file in herbarium sheet. Q. Also write its scientific name, common name, collection date, place. Q. Write the 10 scientific name and common name each of the following- a. Fruits name b. Pulses name c. Birds name d. Mammals name e. Reptiles name f. Gymnosperm g. Eatable fresh water fishes h. Eatable marine water fishes Note : Complete Fair copy of chapter Living world, Biological Classification .
Maths	Do complete all exercises of chapter -1(Sets) from RS Agarwal book.
English	1. Write summary of Chapter number-1, 'The Portrait of a Lady' from 'Hornbill'. (In 200 words) 2. Write a bio-sketch of Khushwant Singh, with photography (In 200 words). 3. Write an article in 300 words on the topic 'Increasing Population in India and Its Impact on Environment'.

11TH PHYSICS HOLIDAY HOMEWORK

1. **The magnitude of vectors *a, b* and *c* are respectively 12, 5 and 13 units and $\vec{A}+\vec{B}=\vec{C}$. What is the angle between *a* and *b* ?**

2. **What is the property of two vectors A and B, if**
   (a) $|\vec{A}+B|=|\vec{A}-B|$ **(b)** $\vec{A}+B=\vec{A}-B$ **?**

3. **Two vectors each of magnitude 5 units have an angle 60° between them. Find the magnitude of**
   (a) the sum of the vectors
   (b) the difference of the vectors

4. **Two forces 8 n and 10 n are acting upon a body. What will be the maximum and minimum resultant force on the body ?**

5. **Two forces of 5 n and 10 n are acting with an inclination of 120° between them. What is the angle which their resultant makes with 10 n ?**

6. **One of the rectangular components of a velocity of 100 kmh^{-1} is 50 km h^{-1}. Find the other component**

7. **An aeroplane takes off at an angle of 30^0 to the horizontal. If the component of its velocity along the horizontal is 250 km h^{-1}, what is its actual velocity? Also find the vertical component of its velocity.**

8. **Find the direction cosines of $5\hat{i}+2\hat{j}+4\hat{k}$.**

9. **Resolve horizontally and vertically a force *f* = 8 n which makes an angle of 45° with the horizontal.**

10. **Resolve a weight of 10 n acting horizontally in two directions which are parallel and perpendicular to a slope inclined at 30° to the horizontal.**

11. **Given:** $\vec{a}=3\hat{i}+4\hat{j}$ **and** $\vec{b}=3\hat{j}+4\hat{k}$**. Calculate the magnitude** $\vec{a}+\vec{b}$**.**

12. **The maximum and minimum numerical value of the resultant of two forces respectively 16 n and 4n, then calculate the numerical value of individual forces.**

13. **If** $P=2\hat{i}+3\hat{j}-\hat{k}$ **and** $Q=-\hat{i}-5\hat{j}+2\hat{k}$**, find the angle between** P **and** Q**.**

14. **Prove that the vectors $\vec{A} = 2\hat{i} - 3\hat{j} + \hat{k}$ and $\vec{B} = \hat{i} + \hat{j} + \hat{k}$ are mutually perpendicular.**

15. **$\hat{i}$ and $\hat{j}$ are unit vectors along x and y-axis respectively. What is the magnitude and direction of the vectors $\hat{i} + \hat{j}$ and $\hat{i} - \hat{j}$? What are the components of a vector $A = 2\hat{i} + 3\hat{j}$ along the direction $\hat{i} + \hat{j}$ and $\hat{i} - \hat{j}$?**

16. **A particle moves from position $\vec{r}_1 = 3\hat{i} + 2\hat{j} - 6\hat{k}$ to position $\vec{r}_2 = 14\hat{i} + 13\hat{j} - 9\hat{k}$ under the action of a force $(4\hat{i} + \hat{j} + 3\hat{k})$ newton. Calculate the work done.**

17. **For what value of *m*, the vector $A = 2\hat{i} + 3\hat{j} - 6\hat{k}$ is perpendicular to $B = 3\hat{i} - m\hat{j} + 6\hat{k}$?**

18. **If $\vec{a} = 2\hat{i} + 3\hat{j} + \hat{k}$ and $\vec{b} = \hat{i} + 2\hat{j} + 3\hat{k}$ find $\vec{a} \times \vec{b}$**

19. **Let a force $\vec{F}$ be acting on a body free to rotate about a point *o* and let $\vec{r}$ the position vector of any point *p* on the line of action of the force. Then torque $(\vec{\tau})$ of this force about point *o* is defined as $\vec{\tau} = \vec{r} \times \vec{F}$. Given, $\vec{F} = (2\hat{i} + 3\hat{j} - \hat{k})$ n and $\vec{r} = (\hat{i} - \hat{j} + 6\hat{k})$ m. find the torque of this force.**

20. **Determine a unit vector which is perpendicular to both $\vec{P} = 2\hat{i} - \hat{j} - \hat{k}$ and $\vec{Q} = \hat{i} + \hat{j} - 2\hat{k}$.**

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HOLIDAY HOME-WORK NOTICE
SESSION - (2025-26)

1) Do all the homework in Homework copy.
2) Write in cursive handwriting only.
3) Holiday Homework contains 5 Marks for each subject.
4) Virtual Summer Camp between 27.05.2025(Tuesday) to 31.05.2025 (Saturday).
5) Summer Vacation will be between 24/05/2025 (Saturday) to 21/06/2025(Saturday). School will re-open on 23/06/2025(Monday).
6) Completed homework copies need to be submitted on June 17-18, as teachers will be available to check them. Copies won't be evaluated if not submitted.
7) You can also get HOLIDAY HOMEWORKS from school website: - www.newerapublicschoolpatna.org