**SUMMER VACATION HOLIDAY HOME WORK-2026**

**CLASS: XII**

**ENGLISH:**

1. Prepare a thematic chart on any one chapter /themes from the English text book
2. Practice 2 reading passages and grammar topics regularly.(use of past tense, Reported speech and Active and Passive voice)
3. Watch a TED TALK and write Summary.
4. Prepare a questionnaire for a Podcast you want to conduct with any famous persoality.
5. Write an essay on "Technology is making us less human," with pros and cons.
6. Read and analyse the following themes and prepare a Project title(one topic) along with objectives and action plan.

- The Last Lesson (Alphonse Daudet): Importance of mother tongue as a key to cultural identity, patriotism, and regret over postponed learning.
- Lost Spring (Anees Jung): Crushing poverty, child labor, loss of childhood, and social apathy.
- Deep Water (William Douglas): Overcoming fear through willpower, courage, and perseverance.
- The Rattrap (Selma Lagerlöf): Human compassion, essential goodness, and the metaphorical "trap" of materialistic life.
- Indigo (Louis Fischer): Gandhian principles of self-reliance, leadership, fighting social injustice, and courage.
- Poets and Pancakes (Asokamitran): Satire on the film industry, superficiality, and human relationships behind glamour.
- The Interview (Christopher Silvester): Perspectives on journalism, the intrusion of interviews, and insight into the minds of celebrities.
- Going Places (A.R. Barton): Adolescent fantasies, escapism from harsh realities, and dreaming big.

Flamingo: Poetry

- My Mother at Sixty-six (Kamala Das): Aging, fear of loss, and the poignant relationship between mother and daughter.
- Keeping Quiet (Pablo Neruda): Necessity of silence, introspection, and universal brotherhood to stop destruction.
- A Thing of Beauty (John Keats): Beauty as an eternal source of joy and solace, removing sadness from life.
- Aunt Jennifer’s Tigers (Adrienne Rich): Constraints of patriarchy, gender roles, and the desire for freedom through art.

Vistas: Supplementary Reader

- The Third Level (Jack Finney): Escapism from the pressures of modern life, the desire for security, and psychological refuge.
- The Tiger King (Kalki): The arrogance of power, the futility of defying fate, and ecological destruction.
- Journey to the End of the Earth (Tishani Doshi): Environmental consciousness, climate change, and the fragility of nature.
- The Enemy (Pearl S. Buck): Humanity and compassion surpassing national loyalty and prejudices.
- On the Face of It (Susan Hill): Overcoming physical disabilities, overcoming loneliness, and the need for friendship/empathy.
- Memories of Childhood (Zitkala-Sa and Bama): Marginalization, racial prejudice, and the loss of innocence/identity.
- विषय: हिंदी

**पठन कौशल**

1 तीन पाठ एवं दो कविताओं को पढ़कर उसका सार (80–100 शब्दों में) लिखें

2 . इन्ही पाठ से जुड़े 5 प्रश्न स्वयं बनाएं

**लेखन कौशल (Writing Skills)**

1. किसी एक पाठ पर अनुच्छेद (150 शब्द)

2. आपके नगर में बिजली कटौती की समस्या है इस की और बिजली विभाग का ध्यान आकर्षित करवाने हेतु सम्पादक को पत्र लिखिए ”

3. स्वरचित कविता

**रचनात्मक गतिविधियाँ (Creative Work)**

3. बाजार दर्शन इस पाठ पर आधारित एक पोस्टर बनाएं

4. अपने शब्दों में नई कहानी लिखें (स्वरचित एवं सचित्र)

**व्याकरण एवं भाषा (Grammar & Language)**

1. अभिव्यक्ति और माध्यम के पाठ 3 से कोई भी 5 प्रश्न स्वयम बनाकर उसके उत्तर लिखिए

2. संचार के माध्यम कौन- कौन से है उनका बारें में संक्षेप्त में लिखिए-

**परियोजना कार्य (Project Work)**

1. किसी पाठ के बारें में लिखकर उनके लेखक का जीवन परिचय दीजिए -

**BIOLOGY:**

**1.Comlpete Record**

**i) Write Evaluation criteria**

**ii) a) major Experiments b) Minor Experiments c) Spotters .**

**2.Complete data collection of INVESSTIGATORY PROJECT selected along with pictures. Write on A/4 Papers with margin along with pictures in proper way. Refer NCERT website for reference. (Don't go for binding)**

**3. Refer Text book and CW make Concept Maps and Mind maps on Sexual Reproduction in Flowering plants and Human Reproduction.**

**4.Read NCERT text book and make MIND MAPS/INFOGRAPHICS with Visuals on A/4 paper in a creative, appealing way on topics ******

**a)Principles of Inheritance b)Molecular Basis of Inheritance d) Human Health and diseases**

**5.Read the lesson Principles of inheritance and write all concepts in CW and be ready for PRESENTATION / SEMINAR on topic allotted on reopening day.**

**CHEMISTRY:**

**1 chemistry investigatory project**

**2.Solve all (1,2,3)sets of CBSE board chemistry question papers2025-2026**

**3.Question and answers from chapter Biomolecules**

**4.Completion of practical records experiments 1 to 4**

**PM SHRI KENDRIYA VIDYALAYA BOWENPALLY**

**CLASS XII 2026-27**

**HOLIDAY HOME WORK**

**DATE: 02-05-2026**

**RELATIONS AND FUNCTIONS**

| | |
|---|---|
| Qn.1 | Find the type of relation, which is describes as the relation "less than" in the set of natural numbers. |
| Qn.2 | Show that the function f : N → N given by f(x) = 2x is one-one but not onto |
| Qn.3 | Show that the function: f : N → N given by f(1) = f(2) = 1 and f(x) = x -1, for every x > 2 is onto but not one-one. |
| Qn.4 | If R = {(x, y) : x + 2y = 8} is a relation in N, write the range of R. |
| Qn.5 | If the function $f: R \to A$ given by $(x)=\frac{x^2}{x^2+1}$ is a surjection, then find $A$ |
| Qn.6 | If the relation $R$ is defined by $aRb$, if and only, if $b$ lives within one kilometer from $a$, then check if the relation is reflexive, symmetric or transitive. |
| Qn.7 | The function $f: X \to Y$ defined by f$(x)$ =sin$x$ is one-one but not onto, then find X and Y. |
| Qn.8 | Let $f$:R→R be defined by f$(x)=\begin{cases} x & \text{if } x > 3 \\ x^2 & \text{if } 1 < x \leq 3 \\ 3x & \text{if } x \leq 1. \end{cases}$,Then find the value of f$(-1)+f(2)+f(4)$ |
| Qn.9 | On the set of integers $Z$, define $f: Z \to Z$ as f$(n)=\begin{cases} \frac{n}{2} \; if \; n = odd \\ 0, if \; n = even \end{cases}$ then Check whether the function is injective or surjective or none. |
| Qn.10 | Find the maximum number of equivalence relations on the set A = {1, 2, 3} |
| Qn.11 | Let A = N x N be the set of ail ordered pairs of natural numbers and R be the relation on the set A defined by (a, b) R (c, d) iff ad = bc. Show that R is an equivalence relation |
| Qn.12 | Show that the relation R on R defined as R = {(a, b):a ≤ b}, is reflexive and transitive but not symmetric. |
| Qn.13 | Let A = (x ∈Z : 0 ≤ x ≤ 12}. Show that R = {(a, b) : a, b ∈ A; \|a – b\| is divisible by 4} is an equivalence relation. Find the set of all elements related to 1. Also write the equivalence class [2]. |

| | |
|---|---|
| Qn.14 | Check whether the relation R in the set R of real numbers, defined by : R = {(a, b): 1 + ab > 0}, is reflexive, symmetric or transitive. |
| Qn.15 | Let N denote the set of all natural numbers and R be the relation on N x N defined by : (a, b) R(c,d) is ad(b + c) = bc(a + d). Show that R is an equivalence relation |
| Qn.16 | Let f: $R^+ \rightarrow [-9,\infty)$ be a function defined as : f(x) = $5x^2$ + 6x – 9. Show than f(x) is bijective |

**INVERSE TRIGONOMETRY**

| | |
|---|---|
| **Q1** | **The value of $\cos^{-1}\left(\cos\frac{3\pi}{2}\right)$ is .....** |
| **Q2** | **Write the range of $sin^{-1}x$.** |
| **Q3** | **What is the principal value of $\sin^{-1}\left(\sin\frac{2\pi}{3}\right) + cos^{-1}\left(\cos\frac{2\pi}{3}\right)$** |
| **Q4** | **Evaluate: $Sin\left[\frac{\pi}{3} - sin^{-1}\left(-\frac{1}{2}\right)\right]$** |
| **Q 5** | **The value of $tan^2(\sec^{-1}2) + cot^2(\text{cosec}^{-1}3)$ is _____** |
| **Q 6** | **Find the value of the following expression: $\cos^{-1}\left(\cos\frac{13\pi}{6}\right)$** |
| **Q 7** | **Find the principal value of $\cot^{-1}(-\sqrt{3})$** |
| **Q 8** | **Write the principal values of $\sec^{-1}(-2)$** |
| **Q 9** | **Write the principal values of $\sec^{-1}\left(-\frac{2}{\sqrt{3}}\right)$** |
| **Q10** | **Write the principal value of the following:$\sin^{-1}\left(\sin\frac{4\pi}{5}\right)$** |
| **Q11** | **Find the value of $\tan^{-1}(1) + \cos^{-1}\left(-\frac{1}{2}\right) + \sin^{-1}\left(-\frac{1}{2}\right)$** |
| **Q 12** | **Evaluate $\sec^2(\tan^{-1}2)$** |
| **Q13** | **Evaluate: $\tan^{-1}\left[\sin\left(-\frac{\pi}{2}\right)\right]$** |
| **Q14** | **State true or false: $\cos^{-1}\left(\cos\frac{7\pi}{6}\right) = \frac{7\pi}{6}$** |
| **Q15** | **Evaluate: $\tan^{-1}\sqrt{3} + \cot^{-1}\frac{1}{\sqrt{3}}$** |
| **Q16** | **Find the value of $\tan^{-1}\sqrt{3} - \sec^{-1}(-2)$** |
| **Q 17** | **State true or false: $\tan^{-1}(\tan(-4)) = -4$** |
| **Q 18** | **Evaluate: $sin^{-1}\left(\frac{1}{2}\right) + 2\,cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$** |
| **Q 19** | **Find the value of: $\sin^{-1}\left(-\frac{1}{2}\right) + \cos^{-1}\left(-\frac{1}{2}\right)$** |
| **Q 20** | **Find the value of $\sin\left[\frac{\pi}{3} - \sin^{-1}\left(-\frac{1}{2}\right)\right]$** |

## MATRICES

Q1.If $\begin{bmatrix} 9 & -1 & 4 \\ -2 & 1 & 3 \end{bmatrix}$ = A + $\begin{bmatrix} 1 & 2 & -1 \\ 0 & 4 & 9 \end{bmatrix}$, then find the matrix A.

Q2. If matrix A = [ 1 2 3 ] , then write AA' ,where A' is the transpose of matrix A.

Q3. If The matrix $\begin{bmatrix} 0 & a & 3 \\ 2 & b & -1 \\ c & 1 & 0 \end{bmatrix}$ is a skew – symmetric matrix, then find the Values of a ,b and c.

Q4.If A =$\begin{bmatrix} cos\alpha & -sin\alpha \\ sin\alpha & cos\alpha \end{bmatrix}$, then for what value of α, A is an identity matrix.

Q5. If $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} \begin{bmatrix} 3 & 1 \\ 2 & 5 \end{bmatrix} = \begin{bmatrix} 7 & 11 \\ k & 23 \end{bmatrix}$, then find the value of k.

Q6. Write a square matrix of order 2, which is both symmetric and skew Symmetric.

Q7. From the following matrix equation , find the value of x :

$\begin{bmatrix} x+y & 4 \\ -5 & 3y \end{bmatrix} = \begin{bmatrix} 3 & 4 \\ -5 & 6 \end{bmatrix}$

Q8. Write the order of the product matrix.

$\begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix} [\ 2 \ \ 3 \ \ 4\ ]$

Q9. For a 2x2 matrix , A = [ $a_{ij}$ ] , whose elements are given by $a_{ij} = \frac{i}{j}$ , Write the value of $a_{12}$

Q10. Simplify : cos θ $\begin{bmatrix} cos\theta & sin\theta \\ -sin\theta & cos\theta \end{bmatrix}$ + sinθ $\begin{bmatrix} sin\theta & -cos\theta \\ cos\theta & sin\theta \end{bmatrix}$

Q11. For what value of x, is the matrix A = $\begin{bmatrix} 0 & 1 & -2 \\ -1 & 0 & 3 \\ x & -3 & 0 \end{bmatrix}$ a skew Symmetric matrix ?

Q12. If A is a 3 x 3 matrix , whose elements are given by $a_{ij} = \frac{1}{3} | -3i + j |$ Then write the value of $a_{23}$

Q13. If A is a square matrix and | A | =2 , then write the value of | AA' |, Where A' is the transpose of matrix A.

Q14. Let A and B are matrices of order 3x2 and 2x4 respectively . write the Order of matrix (AB) .

Q15. If a matrix has 8 elements , what are the possible orders it can have? What if it has 5 elements?

Q16. If A = [ aij ]= $\begin{bmatrix} 2 & 3 & -5 \\ 1 & 4 & 9 \\ 0 & 7 & -2 \end{bmatrix}$ , find $a_{22}+ a_{11}+ a_{33}$

Q17.Construct a 2x2 matrix A =[ a ij ] whose elements are given by

$a_{ij} = \frac{(2i+j))^2}{2}$

Q18. If A = $\begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$ , show that $A^2 -5A +7 I_2 = O$.

Q19. If A = $\begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}$ , prove that $A - A^T$ is a skew symmetric matrix.

Q20. If X – Y = $\begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$ and X + Y = $\begin{bmatrix} 3 & 5 & 1 \\ -1 & 1 & 4 \\ 11 & 8 & 0 \end{bmatrix}$ , find X and Y.

## SHORT ANSWER QUESTIONS

Q1. If $\begin{bmatrix} 2 & 3 \\ 5 & 7 \end{bmatrix} \begin{bmatrix} 1 & -3 \\ -2 & 4 \end{bmatrix} = \begin{bmatrix} -4 & 6 \\ -9 & x \end{bmatrix}$ , then write the value of x.

Q2. Find the value of x + y from the following equation :

$$2\begin{bmatrix} x & 5 \\ 7 & y-3 \end{bmatrix} + \begin{bmatrix} 3 & -4 \\ 1 & 2 \end{bmatrix} = \begin{bmatrix} 7 & 6 \\ 15 & 14 \end{bmatrix}$$

Q3. If matrix A = $\begin{bmatrix} 1 & -1 \\ -1 & 1 \end{bmatrix}$ and $A^2 = kA$ then write the value of k.

Q4. Show that A'A and AA' are both symmetric matrices for any matrix A.

Q5. If matrix A = If $\begin{bmatrix} 3 & -3 \\ -3 & 3 \end{bmatrix}$ and $A^2 = \lambda a$ ,then write the value of λ.

Q6. If A is a square matrix such that $A^2 = I$ , then find the simplified value of $(A - I)^3 + (A + I)^3 - 7A$.

Q7. Matrix A =$\begin{bmatrix} 0 & 2b & -2 \\ 3 & 1 & 3 \\ 3a & 3 & -1 \end{bmatrix}$ is given to be symmetric, find the value of a and b.

Q8. If matrix A = [ 1 2 3 ] , write A $A^T$ .

Q9. Find the value of x and y which makes the following pair of matrices are equal.

$$\begin{bmatrix} 2x+y & 3y \\ 0 & 4 \end{bmatrix} = \begin{bmatrix} 6 & 0 \\ 6 & 4 \end{bmatrix}$$

Q10.If A and B are symmetric matrices , such that AB and BA are both defined , then prove that AB-BA is a skew symmetric matrix.

Q11. For the matrix A == $\begin{bmatrix} 2 & 3 \\ 5 & 7 \end{bmatrix}$ , Find A + $A^T$ and verify it is a symmetric matrix.

Q12. If A = $\begin{bmatrix} 3 & -2 \\ 4 & -2 \end{bmatrix}$ and I = $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ , then prove that $A^2$ -A +2I =O

Q13. If A = $\begin{bmatrix} cos2\theta & sin2\theta \\ -sin2\theta & cos2\theta \end{bmatrix}$ , Find $A^2$ .

Q14. Show that the matrix $B^T$ AB is symmetric or skew symmetric according as A is symmetric or skew symmetric.

Q15. Find a 2x2 matrix A such that A $\begin{bmatrix} 1 & -2 \\ 1 & 4 \end{bmatrix}$ = 6 $I_2$

Q16.Find the value of x , y, z if the matrix A = $\begin{bmatrix} 0 & 2y & z \\ x & y & -z \\ x & -y & z \end{bmatrix}$ satisfy the Equation $A^T A = I_3$

Q17. If the matrix A = $\begin{bmatrix} 0 & a & 3 \\ 2 & b & -1 \\ c & 1 & 0 \end{bmatrix}$ is skew symmetric, find the values of a , b and c .

Q18. Let A and B be symmetric matrices of the same order. Then show that AB -BA is a skew symmetric matrix.

Q19. If Matrix A = $\begin{bmatrix} 2 & -2 \\ -2 & 2 \end{bmatrix}$ and $A^2$ = p A , then write the value of p.

Q20. Let A = $\begin{bmatrix} 2 & -3 \\ -7 & 5 \end{bmatrix}$ and B = $\begin{bmatrix} 1 & 0 \\ 2 & -4 \end{bmatrix}$, verify that $(A - B)^T = A^T - B^T$

## LONG ANSWER TYPE QUESTIONS

Q1. If A = $\begin{bmatrix} 1 & -1 \\ 2 & -1 \end{bmatrix}$ and B = $\begin{bmatrix} a & 1 \\ b & -1 \end{bmatrix}$ and $(A + B)^2 = A^2 + B^2$ ,then find The values of a and b.

Q2. If A = $\begin{bmatrix} 2 & -1 \\ 3 & 4 \end{bmatrix}$ , B = $\begin{bmatrix} 5 & 2 \\ 7 & 4 \end{bmatrix}$ $and\ C = \begin{bmatrix} 2 & 5 \\ 3 & 8 \end{bmatrix}$ . Find a matrix D such that CD -AB =O.

Q3. Prove that every square matrix can be expressed as the sum of symmetric and skew symmetric matrix.

Q4. Find the matrix A satisfying the matrix equation

$\begin{bmatrix} 2 & 1 \\ 3 & 2 \end{bmatrix}$ A $\begin{bmatrix} -3 & 2 \\ 5 & -3 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$.

Q5. If A = $\begin{bmatrix} 2 & -1 \\ -1 & 2 \end{bmatrix}$ , and I is the identity matrix of order 2, then show that

$A^2$ =4A-3I. Hence find $A^{-1}$

Q6. If A = $\begin{bmatrix} 2 & 3 \\ -1 & 2 \end{bmatrix}$ , then show that $A^2$ -4A+7I=0, using this result, calculate

Q7. Find the values of a,b,c and d if $\begin{bmatrix} a-b & 2a+c \\ 2a-b & 3c+d \end{bmatrix} = \begin{bmatrix} -1 & 5 \\ 0 & 13 \end{bmatrix}$

Q8. If A= $\begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$ and I = $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, then find λ so that $A^2$ = 5A + λI

Q9 If A = $\begin{bmatrix} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{bmatrix}$ , prove that $A^3$-6$A^2$+7A+2I=0

Q10. If A= $\begin{bmatrix} 3 & -2 \\ 4 & -2 \end{bmatrix}$ and I = $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ , then find k so that $A^2$ = kA -2I

Q11. Express the matrix as the sum of a symmetric and a skew symmetric

matrix $\begin{bmatrix} 3 & 3 & -1 \\ -2 & -2 & 1 \\ -4 & -5 & 2 \end{bmatrix}$

Q12. For matrix A = $\begin{bmatrix} 1 & 5 \\ 6 & 7 \end{bmatrix}$ , verify that( A + A′ ) is a symmetric matrix.

Q13. If A = diag(1 -1 2) and B = diag(2 3 -1) find A + B, 3A + 4B

Q14. The monthly income of Aryan and Babban are in the ratio 3:4 and

Their monthly expenditures are in the ratio 5:7. If each saves

Rs.15000 per month, find their monthly income using matrix method.

Q15. Find a matrix X, such that 2A +B+ X=O, where A= $\begin{bmatrix} -1 & 2 \\ 3 & 4 \end{bmatrix}$ and

# COMPUTER SCIENCE
## MCQ

1. Which one of the following is a valid Python if statement :
   a. if a>=2 : b. if (a >= 2) c. if (a => 22) d. if a >= 22
2. The order of statement execution in the form of top to bottom is known as construct.
   a. alternate b. sequence c. flow of data
   d. flow chart
3. The two membership operators are
   .....and .....
   a. in, not in b. true , false c.=,== d. none
4. A graphical representation of an algorithm to solve a problem is called .....
   a. flow of data b. barchart c. flow chart d. none
5. What is the logical expression
   for the following Either A is
   greater than B or A is less than
   C
   a. A>B or A<C b. A>B and A<C c . A>Band C d. A>Bor C
6. Which statement will check if a is equal to b?
   a. if a = b: b. if a == b: c. if a === c: d. if a == b
7. Consider the given expression:
   "Python" or True and "Programming" or not 70
   Which of the following will be correct output if the given expression is evaluated ?
   (a) True (b) False (c) 'Python' (d) 'Programming'
8. What shape represents a decision in a flowchart ?
   (a) A diamond (b) A rectangle (c) An oval (d) A parallelogram
9. To add and assign the value 10 to a variable a we cannot write
   (a) a=a+10 (b) a+=10 (c ) a=+10 (d) a=10+10

## Very Short Answers

Answer the Following Questions (Very Short Answers)

i. Define Algorithm
ii. What is decomposition?
iii. Why do we need Algorithm?
iv. What is meant by Debugging?
v. Write difference between algorithm and flowchart.
vi. Write the pseudocode to print all multiples of 5 between 10 and 25 (including both 10 and 25).
vii. Write an algorithm to find the greatest among two different numbers
viii. Write a pseudocode to calculate the factorial of a number
ix. Write an algorithm to find greatest among three numbers

x. Is ‘None’ and None same? Explain Why.