

HOLIDAY HOMEWORK FOR CLASS-12TH-SCI

ENGLISH:-

- a) Draft a colourful poster on Health is Wealth.
- b) Write the summary of Keeping Quiet (poem).
- c) You are Niket / Niketa. You are perturbed at condition of migrant labourer in the current setup. Write a letter to the editor of a national daily giving your views and suggestion.
- d) Learn all the work done in your notebook.

PHYSICAL EDUCATION:-

Unit-1. Planning in Sports. Questions and Answers & Objective type/ Multiple- Choice Questions.

Unit-2. Sports & Nutrition. Objective type/ Multiple choice Questions and shot & Long Questions.

Unit-3. Yoga & Life style. Objective type/Multiple choice Questions and Shot & Long Questions.

MATHEMATICS:-

Work Sheet - 1
class - XII
Sub - Maths

Q1 In the Matrix. $A = \begin{bmatrix} 2 & 1 & -3 \\ 5 & 0 & 7 \\ 8 & 4 & 0 \\ 10 & 6 & 7 \end{bmatrix}$ write (i) order of the Matrix (ii) number of elements, (iii) the elements a_{13}, a_{42}

Q2 If a Matrix has 18 elements, what are the possible orders it can have? what, if it has 5 elements?

Q3 If A is 3×3 matrix whose elements are given by $a_{ij} = \frac{|i-j|}{3}$, write the value of a_{23}

Q4 If $\begin{bmatrix} 2x+3 & 5 \\ y-2 & x+y \end{bmatrix} = \begin{bmatrix} 7 & 5 \\ 4 & 8 \end{bmatrix}$ what is the value of x and y ?

Q5 If $A = \begin{bmatrix} 0 & x & -3 \\ 2 & 0 & -1 \\ y & 1 & 0 \end{bmatrix}$ is skew symmetric Matrix, what will be the value of x and y ?

Q6 Write the value of $x+y+z$, if $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 1 \\ -1 \\ 0 \end{bmatrix}$

Q7 Write the Matrix X such that $2A - B + X = 0$ where $A = \begin{bmatrix} 3 & 1 \\ 0 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} -2 & 1 \\ 0 & 3 \end{bmatrix}$

Q8 If $2 \begin{bmatrix} 1 & 3 \\ 0 & a \end{bmatrix} + \begin{bmatrix} b & 0 \\ 1 & 2 \end{bmatrix} = \begin{bmatrix} 5 & 6 \\ 1 & 8 \end{bmatrix}$ write the value of a and b .

Q9 If $A = \begin{bmatrix} 1 & 2 \\ 3 & -1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 3 \\ -1 & 1 \end{bmatrix}$, write the value of AB .

Q10 If $A = \text{diag}[2, -5, 9]$, $B = \text{diag}[-3, 7, 14]$ and $C = \text{diag}[-2, 7, 1]$ write $2A + B - 3C$

Q11 Write the number of all possible matrices of order 2×3 with each entry 1, 2 or 3

Q12 If $A = \begin{bmatrix} 5 & -1 & 0 \\ 4 & 2 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} -1 & 2 & 1 \\ 1 & 2 & 3 \end{bmatrix}$, then find $A' - B'$

Find the value of x, y, z if Matrix $A = \begin{bmatrix} 0 & 2y & z \\ x & y & -z \\ y & -y & z \end{bmatrix}$ satisfy

Q13 the equation $AA' = I$

Q14 Find x , if $\begin{bmatrix} x & -5 & -1 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{bmatrix} \begin{bmatrix} x \\ 4 \\ 1 \end{bmatrix} = 0$

Q15 DO all example of N.C.E.R of chapter - 3 (Matrices)

Work sheet - 2

- * Let R be the relation on \mathbb{R} , defined by $R = \{(a,b) : a^2 + b^2 = 1\}$. Show that R is symmetric but neither reflexive nor transitive.
- * Let A be the set of all positive integers and R be a relation on $A \times A$, defined by $(a,b) R (c,d) \Leftrightarrow ad = bc \forall (a,b), (c,d) \in A \times A$. Show that R is an equivalence relation on $A \times A$.

- * Give an example of a map
 - (i) Which is one-one but not onto
 - (ii) Which is neither one-one nor onto
 - (iii) Which is not one-one but onto

* Solve system of eqs by using Matrix method.

(i) $\frac{2}{x} + \frac{3}{y} + \frac{10}{z} = 4, \frac{4}{x} - \frac{6}{y} + \frac{5}{z} = 1, \frac{6}{x} + \frac{9}{y} - \frac{20}{z} = 2, x, y, z \neq 0$
 (ii) $2x - 3y + 5z = 11, 3x + 2y - 4z = -5, x + y - 2z = -3$

* Two matrices A and B , $A = \begin{bmatrix} 1 & -2 & 3 \\ 4 & 1 & 1 \\ 1 & -3 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 11 & -5 & -14 \\ -1 & -1 & 2 \\ -7 & 1 & 6 \end{bmatrix}$

Find AB and use the result to solve eqs.

$2x - 2y + 3z = 6, x + 4y + z = 12, x - 3y + 2z = 1$

* Find inverse by using elementary row operations

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

* Prove by using properties of determinants

(i) $\begin{vmatrix} 0 & a & -b \\ -a & 0 & c \\ b & c & 0 \end{vmatrix} = 0$ (ii) $\begin{vmatrix} 1 & a & a^2 & bc \\ 1 & b & b^2 & -ac \\ 1 & c & c^2 & -ab \end{vmatrix} = 0$

(iii) If $A+B+C = \pi$ then prove that

$$\begin{vmatrix} \sin(A+B+C) & \sin B & \cos C \\ -\sin B & 0 & \tan A \\ \cos(A+B) & -\tan A & 0 \end{vmatrix} = 0$$

* do All Example of N.C.E.R.T of chap - 1, 3 and 4

* Find maximum value of $\begin{vmatrix} 1 & 1 & 1 \\ 1 & 1+\sin\theta & 1 \\ 1 & 1 & 1+\cos\theta \end{vmatrix}$

* Prove that $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^3 & b^3 & c^3 \end{vmatrix} = (a-b)(b-c)(c-a)(a+b+c)$