



# INDIAN SCHOOL DARSAIT DEPARTMENT OF MATHEMATICS



**Subject :MATHEMATICS Topic :MATRIX MULTIPLICATION**

**Date :24-4-2017**

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**Name of the Student: \_\_\_\_\_**

**Class &Division:Roll. Number:**

Sl.N o.	Questions	Mark s
1.	Find the value of x + y from the following equation  $2 \begin{bmatrix} x & 5 \\ 7 & y-3 \end{bmatrix} + \begin{bmatrix} 3 & -4 \\ 1 & 2 \end{bmatrix} = \begin{bmatrix} 7 & 6 \\ 15 & 14 \end{bmatrix}$	1
2.	Find the value of x,y,z and w such that $\begin{bmatrix} x-y & 2z+w \\ 2x-y & 2x+w \end{bmatrix} = \begin{bmatrix} 5 & 3 \\ 12 & 15 \end{bmatrix}$	4
3.	The sales figure of two car dealers during January 2007 showed that dealer A sold 5deluxe,3 premium and 4 standard cars,while dealer B sold 7deluxe,3premium and 2standard cars .Total sale over the two month period of January-February revealed that dealer A sold 8deluxe,7 premium and 6standard cars.in the same 2month period dealer B sold 10deluxe,5premium and 7standard cars.Write 2×3 matrices summarizing sales data for January and 2-monthperiod for each dealer.	4
4.	In a certain city there are 30 colleges Each college has 15 peons,6 clerks,1 typist and 1 section officer. Express the given information as a column matrix .Using scalar multiplication,find the total number of posts for each kind in the colleges.	4
5.	If $A = \begin{bmatrix} 2 & -1 \\ 3 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 4 \\ -1 & 7 \end{bmatrix}$ , find $3A^2-2B+I$ .	4
6.	If $A = \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix}$ , $f(x)=x^2-2x-3$ ,show that $f(A)=0$ .	4
7.	There are two families A and B. There are 4 men, 6 women and 2 children in family A and 2 men, 2 women and 4 children in family B. The recommended daily allowance for calories is :Man : 2400, Women :1900, Child : 1800 and for proteins is : Man : 55gm : Women :45 gm and child : 33gm. Represent the above information by matrices. Using matrices multiplication, calculate the total requirement of calories and proteins for each of the two families.	4
8.	Three shopkeepers A,B and C go to a store to buy stationary. A purchases 12 dozen notebooks, 5 dozen pens and 6 dozen pencils. B purchases 10 dozen notebooks, 6 dozen pens and 7 dozen pencils. C purchases 11 dozen notebooks, 13 dozen pens and 8 dozen pens. A notebook costs 40 paisa, a pen costs Rs. 1.25 and a pencil costs 35 paisa. Use matrix multiplication to calculate each individual's bill.	4
9.	The cooperative stores of a particular school has 10 dozen physics books, 8 dozen chemistry books and 5 dozen mathematics books. Their selling price are Rs. 8.30, Rs. 3.45 and Rs 4.50 respectively. Find the total amount the store will receive from selling all the items.	4

10.	<p>In a legislative assembly election, a political group hired a public relations firm to promote its candidates in three ways : telephone , house calls and letters. The cost per contact ( in paise) is given matrix A as</p> <p>Cost per contact</p> $A = \begin{bmatrix} 40 \\ 100 \\ 50 \end{bmatrix}$ <p>The number of contacts of each type made in two cities X and Y is given in matrix B as</p> <p>Telephone house call letter</p> $B = \begin{bmatrix} 1000 & 500 & 5000 \\ 3000 & 1000 & 10000 \end{bmatrix}$ <p>Find the total amount spent by the group in the two cities X and Y.</p>	6
11.	<p>If <math>A = \begin{bmatrix} 1 &amp; -1 \\ 2 &amp; -1 \end{bmatrix}</math>, <math>B = \begin{bmatrix} a &amp; 1 \\ b &amp; -1 \end{bmatrix}</math> and <math>(A+B)^2 = A^2 + B^2</math>, find a and b.</p>	4
12.	<p>If <math>A = \begin{bmatrix} 0 &amp; 0 \\ 2 &amp; 0 \end{bmatrix}</math>, then find <math>A^{19}</math>.</p>	2
13.	<p>Find the inverse using elementary operation <math>A = \begin{bmatrix} 1 &amp; 2 &amp; -2 \\ -1 &amp; 3 &amp; 0 \\ 0 &amp; -2 &amp; 1 \end{bmatrix}</math></p>	4
14.	<p>Express the following matrix as the sum of symmetric and skew symmetric matrices <math>\begin{bmatrix} 3 &amp; -2 &amp; -4 \\ 3 &amp; -2 &amp; -5 \\ -1 &amp; 1 &amp; 2 \end{bmatrix}</math></p>	4
15.	<p>If <math>A = \begin{bmatrix} 2 &amp; 0 &amp; 1 \\ 2 &amp; 1 &amp; 3 \\ 1 &amp; -1 &amp; 0 \end{bmatrix}</math>, then find the value of <math>A^2 - 3A + 2I</math></p>	4

Dear Children,  
There is no substitute for hard work.  
All the best. God Bless.