Syllabus

Q. 4. $A = [a_{ij}]_{m \times n}$ is a square matrix,

(A) $m < n$ **(B)**

(C) $m = n$ **(D)**

Ans. Option (C) is correct.

> ***Explanation*** : It is known th
> said to be a square matrix if
> is equal to the number of col
> Therefore,
> $A = [a_{ij}]_{m \times n}$ is a square matri

Q. 5. Which of the given values
following pair of matrices equ

$$\begin{bmatrix} 3x+7 & 5 \\ y+1 & 2-3x \end{bmatrix},$$

(A) $x = \frac{-1}{3}, y = 7$ **(B)**

(C) $y = 7, x = \frac{-2}{3}$ **(D)**

Also $A + A' = I$

$$\Rightarrow \begin{bmatrix} \cos\alpha & -\sin\alpha \\ \sin\alpha & \cos\alpha \end{bmatrix} + \begin{bmatrix} \cos\alpha$$

$$\Rightarrow \begin{bmatrix} 2\cos\alpha \\ 0 \end{bmatrix}$$

Equating corresponding ent

$$\Rightarrow \quad 2\cos\alpha = 1$$

$$\Rightarrow \quad \cos\alpha = \frac{1}{2}$$

$$\Rightarrow \quad \cos\alpha = \cos$$

$$\therefore \quad \alpha = \frac{\pi}{3}$$

Q. 10. Matrices A and B will be inve

if

(A) $AB = BA$ **(B)**

Explanation: We know that
if $b_{ij} = 0$ when $i \neq j$ then it is
matrix. Here, $b_{12}, b_{13}\ldots. \neq 0$
is not a diagonal matrix.

Now, $B = \begin{bmatrix} 0 & -5 \\ 5 & 0 \\ -8 & -1 \end{bmatrix}$

$B' = \begin{bmatrix} 0 & 5 \\ -5 & 0 \\ 8 & 12 \end{bmatrix}$

$= -\begin{bmatrix} 0 & \\ 5 & \\ -8 & \end{bmatrix}$

$= -B$

Q. 5. Let A and B be two symmetri

Assertion (A): A(BA) and (

matrices.

Reason (R): AB is symmet

multiplication of A with B is c

Ans. Option (B) is correct.

Explanation: Generally (*AB*

If $AB = BA$, then $(AB)' = (BA$

Since $(AB)' = AB$, AB is a

Hence R is true.

$$A(BA) = (AB)A$$

$$(ABA)' = A'B'A$$

$A(BA)$ and $(AB)A$ are symme

A is true.

But R is not the correct expla

Explanation: Total revenue c

$$= [10,000 \quad 2,000 \quad 18,000] \begin{bmatrix} 2 \\ 1 \\ 1 \end{bmatrix}$$

$$= [2.50 \times 10,000 + 1.50 \times 2,00$$

$$= [46,000]$$

Q. 2. Total revenue of market B

(A) ₹ 35,000 **(B**

(C) ₹ 50,300 **(D**

Ans. Option (B) is correct.

Explanation: Total revenue c

$$= [6,000 \quad 20,000 \quad 8,000] \begin{bmatrix} 2. \\ 1. \\ 1. \end{bmatrix}$$

$$= [2.50 \times 6,000 + 1.50 \times 20,00$$

$$= [53,000]$$

Q. 3. $(bA)^T$ is equal to

(A) $\begin{bmatrix} -2 & -4 \\ 2 & -6 \end{bmatrix}$ (B

(C) $\begin{bmatrix} -2 & 2 \\ -6 & -4 \end{bmatrix}$ (D

Ans. Option (B) is correct.

Explanation:

$$bA = -2A = \begin{bmatrix} -2 \\ 2 \end{bmatrix}$$

$$(bA)^T = \begin{bmatrix} -2 & 2 \\ -4 & -6 \end{bmatrix}$$

Q. 4. AC − BC is equal to

(A) $\begin{bmatrix} -4 & -6 \\ -4 & 4 \end{bmatrix}$ (B

total money collected by all s

(A) ₹18,000 (

(C) ₹5,000 (D

Ans. Option (D) is correct.

Q. 5. How many articles (in tota schools?

(A) 230 (

(C) 430 (D

Ans. Option (D) is correct.

IV. Read the following text and questions on the basis of the

On her birthday, Seema dec money to children of an orpl were 8 children less, every ₹10 more. However, if there w everyone would have got ₹1 of children be x and the a Seema for one child be y (in ₹

$x = 32$

$y = 30$

Hence, 32 children were giv
Seema.

Q. 4. How much amount is giv
Seema?

(A) ₹32 (
(C) ₹62 (D

Ans. Option (B) is correct.

Explanation: ₹ 30 is given to
[$\because y = 30$]

Q. 5. How much amount Seema s
the money to all the students

(A) ₹609 (
(C) ₹906 (D

Ans. Option (B) is correct.

Explanation: Total amount

$$\begin{matrix} & \text{Basmati} & \text{Permal} & \text{Naura} \\ \begin{matrix} \\ \\ \end{matrix} & \begin{bmatrix} 10,000 & 20,000 & 30,000 \\ 50,000 & 30,000 & 10,000 \end{bmatrix} & \begin{matrix} \text{I} \\ \text{C} \end{matrix} \end{matrix}$$

$$= \begin{matrix} & \text{Basmati} & \text{Permal} & \text{Nau} \\ \begin{matrix} \\ \\ \end{matrix} & \begin{bmatrix} 200 & 400 & 600 \\ 1000 & 600 & 200 \end{bmatrix} & \end{matrix}$$

Thus, in September Guruch
₹ 600 and ₹ 200 as Profit in th
of rice, respectively.

VI. Read the following text and
questions on the basis of the
There are three families *A*, *I*
of members in these families
below.

	Men	**W**
Family *A*	3	
Family *B*	2	

Ans. Option (A) is correct.

Explanation:

Fund raised by SNT = ₹

$$[40 \quad 50 \quad 20]\begin{bmatrix}25\\100\\50\end{bmatrix} = [$$

Q. 2. Funds collected by SNP is ___

(A) ₹7000 **(B**

(C) ₹7875 **(D**

Ans. Option (B) is correct.

Explanation:

$$[25 \quad 40 \quad 30]\begin{bmatrix}25\\100\\50\end{bmatrix} = [$$

Fund raised by SNP = ₹