Adabistan-e-Soophia

Code: 1050

Test No.: 1 **Paper:** Mathematics

Name:_____ **Class:** IX **Sec:** _____

Syllabus: **Ch. 1, 5, 10**

Question Numbers	**1**	**2**	**3**	**4**		**Total**	**Grade**	**%age**
Maximum Marks	08	16	08	08		**40**		
Marks Obtained								
Remarks:_____								

Time Allowed: 15 mins **(Objective Type)** **Max. Marks: 08**

	A	B	C	D	Write Correct option
1	A	B	C	D	
2	A	B	C	D	
3	A	B	C	D	
4	A	B	C	D	

	A	B	C	D	Write Correct option
5	A	B	C	D	
6	A	B	C	D	
7	A	B	C	D	
8	A	B	C	D	

	A	B	C	D	Write Correct option
9	A	B	C	D	
10	A	B	C	D	
11	A	B	C	D	
12	A	B	C	D	

	A	B	C	D	Write Correct option
13	A	B	C	D	
14	A	B	C	D	
15	A	B	C	D	
16	A	B	C	D	

Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink. Cutting or filling two or more times result in zero mark in that question.

Q.1	Questions	(A)	(B)	(C)	(D)
1.	The order of matrix $[2 \quad 1]$ is:	2 by 1	1 by 2	1 by 1	2 by 2
2.	$\begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix}$ is called _____ matrix.	Zero	Unit	Scaler	Singular
3.	Which is order of a square matrix?	2 by 2	1 by 2	2 by 1	3 by 2
4.	Order of transpose of $\begin{bmatrix} 2 & 1 \\ 0 & 1 \\ 3 & 2 \end{bmatrix}$ is:	3 by 2	2 by 3	1 by 3	3 by 1
5.	Adjoint of $\begin{bmatrix} 1 & 2 \\ 0 & -1 \end{bmatrix}$ is:	$\begin{bmatrix} -1 & -2 \\ 0 & 1 \end{bmatrix}$	$\begin{bmatrix} 1 & -2 \\ 0 & -1 \end{bmatrix}$	$\begin{bmatrix} -1 & 2 \\ 0 & -1 \end{bmatrix}$	$\begin{bmatrix} -1 & 0 \\ 2 & 1 \end{bmatrix}$
6.	Product of $[x \quad y]\begin{bmatrix} 2 \\ -1 \end{bmatrix}$ is:	$[2x + y]$	$[x - 2y]$	$[2x - y]$	$[x + 2y]$
7.	If $\begin{vmatrix} 2 & 6 \\ 3 & x \end{vmatrix} = 0$, then x is equal to:	9	-6	6	-9
8.	If $x + \begin{bmatrix} -1 & -2 \\ 0 & -1 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, then x is equal to:	$\begin{bmatrix} 2 & 2 \\ 2 & 0 \end{bmatrix}$	$\begin{bmatrix} 0 & 2 \\ 2 & 2 \end{bmatrix}$	$\begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix}$	$\begin{bmatrix} 2 & 2 \\ 0 & 2 \end{bmatrix}$
9.	The factors of $x^2 - 5x + 6$ are:	$x + 1, x - 6$	$x - 2, x - 3$	$x + 6, x - 1$	$x + 2, x + 3$
10.	Factors of $8x^3 + 27y^3$ are:	$2x + 3y,$ $4x^2 + 9y^2$	$2x - 3y,$ $4x^2 - 9y^2$	$2x + 3y,$ $4x^2 - 6xy + 9y^2$	$2x - 3y,$ $4x^2 + 6xy + 9y^2$

11.	Factors of $3x^2 - x - 2$ are:	$x + 1, 3x - 2$	$x + 1, 3x + 2$	$x - 1, 3x - 2$	$x - 1, 3x + 2$
12.	Factors of $a^4 - 4b^4$ are:	$a - b, a + b,$ $a^2 + 4b^2$	$a - b, a + b,$ $a^2 - 4b^2$	$a^2 - 2b^2,$ $a^2 + 2b^2$	$a - 2b,$ $a^2 + 2b^2$
13.	What will be added to complete the square of $9a^2 - 12ab$?	$-16b^2$	$16b^2$	$4b^2$	$-4b^2$
14.	Find m so that $x^2 + 4x + m$ is a complete square.	8	-8	4	16
15.	Factorization of $5x^2 - 17xy - 12y^2$ are:	$x + 4y,$ $5x + 3y$	$x - 4y,$ $5x - 3y$	$x - 4y,$ $5x + 3y$	$5x - 4y,$ $x + 3y$
16.	Factorization of $27x^3 - \frac{1}{x^3}$ are	$\left(3x - \frac{1}{x}\right)$ $\left(9x^2 + 3 + \frac{1}{x^2}\right)$	$\left(3x + \frac{1}{x}\right)$ $\left(9x^2 + 3 + \frac{1}{x^2}\right)$	$\left(3x - \frac{1}{x}\right)$ $\left(9x^2 - 3 + \frac{1}{x^2}\right)$	$\left(3x + \frac{1}{x}\right)$ $\left(9x^2 - 3 + \frac{1}{x^2}\right)$

Time Allowed: 75 minutes **(Subjective Type)** **Max. Marks: 32**

(Section - I)

2. Attempt the following questions. **(8×2=16)**

i. Define symmetric matrix.

ii. If $A = \begin{bmatrix} 1 & 2 \\ 0 & 1 \end{bmatrix}, B = \begin{bmatrix} 1 & 1 \\ 2 & 0 \end{bmatrix}$, then verify that $(A - B)^{\boldsymbol{t}} = A^t - B^t$.

iii. If $\begin{bmatrix} a+3 & 4 \\ 6 & b-1 \end{bmatrix} = \begin{bmatrix} -3 & 4 \\ 6 & 2 \end{bmatrix}$, then find $\boldsymbol{a}$ and $\boldsymbol{b}$.

iv. If $A = \begin{bmatrix} 1 & 2 \\ -3 & -5 \end{bmatrix}$ then evaluate A^{-1}.

v. Factorize: $x(x-1) - y(y-1)$.

vi. Factorize: $x^2 - y^2 - 6y - 9$.

vii. If $(x+2)$ is a factor of $3x^2 - 4kx - 4k^2$, then find the values of k.

viii. Factorize: $x^3 + 48x - 12x^2 - 64$.

(Section - II)

Note: Solve the following questions. **(8x2=16)**

3. **(a)** Use Cramer's rule, find the solution of linear equations. $2x + y = 3,\ 6x + 5y = 1$ **(4)**

(b) If $B = \begin{bmatrix} 1 & 2 \\ 0 & 1 \end{bmatrix}$ then show that $B - B^t$ is skew-symmetric. **(4)**

4. **(a)** Factorize: $(x^2 + 5x + 4)(x^2 + 5x + 6) - 3$ **(4)**

(b) Determine the value of k is $P(x) = kx^3 + 4x^2 + 3x - 4$ and $q(x) = x^3 - 4x + k$ leaves the same remainder when divided by $x - 3$. **(4)**