

Adabistan-e-Soophia

2nd Term Examination 2020 – 21

Student's Name																		
Class	Pre – IX	Roll #								Paper	Mathematics							
QUESTION NUMBER		1	2	3	4	5	6	Total										
MAXIMUM MARKS		15	36	08	08	08	08	75										
MARKS OBTAINED																		
CHECKED BY:																		

1. 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 is zero mark in that question. (15)

Sr #	Questions	(A)	(B)	(C)	(D)
i.	$\log_y^x = \underline{\hspace{2cm}}$.	$\frac{\log_z^x}{\log_z^y}$	$\frac{\log_x^z}{\log_y^z}$	$\frac{\log_z^x}{\log_z^y}$	none of these
ii.	$\log_b^a \times \log_c^b = \underline{\hspace{2cm}}$.	\log_a^c	\log_c^a	\log_a^b	\log_b^c
iii.	$\log(m)^n = \underline{\hspace{2cm}}$.	$(\log m)^n$	$m \log n$	$n \log m$	$\log mn$
iv.	$\log p - \log q = \underline{\hspace{2cm}}$.	$\log \frac{q}{p}$	$\log(p - q)$	$\log \frac{p}{q}$	none of these
v.	If $a^x = n$, then:	$a = \log_n^x$	$x = \log_n^a$	$x = \log_a^n$	$a = \log_n^x$
vi.	The relation $y = \log_z^x$, implies:	$x^y = z$	$z^y = x$	$x^z = y$	$y^z = x$
vii.	The logarithm of unity to any base is:	1	10	e	0
viii.	$\log_e = \underline{\hspace{2cm}}$, where $e = 2.718$	0	0.4343	∞	1
ix.	$4x + 3y = 3$ is an algebraic _____.	sentence	expression	equation	inequation
x.	The degree of polynomial $4x^2 + 2x^2y^2$ is:	1	2	3	4
xi.	$a^3 + b^3 = (a + b)(\underline{\hspace{1cm}})$	$a^2 - ab + b^2$	$a^2 + ab + b^2$	$a^2 - 2ab + b^2$	$a^2 + 2ab + b^2$
xii.	$(3 + \sqrt{2})(3 - \sqrt{2}) = \underline{\hspace{2cm}}$.	7	-7	-1	1
xiii.	Conjugate of surd $a + \sqrt{b}$ is _____.	$-a + \sqrt{b}$	$a - \sqrt{b}$	$-a - \sqrt{b}$	none of these
xiv.	Order of the surd $\sqrt[3]{x^2}$ is _____.	2	3	6	$\frac{2}{3}$
xv.	$x^2 - y^2 = (x + y)(\underline{\hspace{1cm}})$	$x + y$	$x - y$	$2xy$	$-2xy$

(Section – I)

Note: Don't use ink remover anywhere in the paper.

Write proper question numbers and part numbers as mentioned in question paper.

2. Attempt the following questions. (Any Eighteen)**(18x2=36)**

- i. Express $\frac{275000}{0.0025}$ in scientific notation.
- ii. Find common logarithm of 0.3206.
- iii. Find the number whose common logarithm is 3.5621
- iv. Find the value of n if $\log_5^n = 2$
- v. Evaluate $\log_2 \left[\frac{1}{128} \right]$
- vi. Express in the form of a single logarithm $2\log x - 3\log y$
- vii. Calculate $\log_5^3 \times \log_3^{25}$
- viii. If $\log 2 = 0.3010$, then evaluate $\log 32$
- ix. Express 9.018×10^{-6} in ordinary form.
- x. Define rational expression.
- xi. Reduce $\frac{8a(x+1)}{2(x^2-1)}$ into lowest form.
- xii. Evaluate $\frac{x^3y-2z}{xz}$ for $x = 3, y = -1$, and $z = -1$
- xiii. Simplify: $(x^2 - 49) \cdot \frac{(5x+2)}{(x+7)}$
- xiv. If $x - \frac{1}{x} = 7$, then find the value of $x^3 - \frac{1}{x^3}$
- xv. Factorize: $x^3 - y^3 - x + y$
- xvi. Simplify: $(\sqrt{5} + \sqrt{3})^2$
- xvii. If $x = 2 - \sqrt{3}$ then find the value of $\frac{1}{x}$.
- xviii. Simplify: $(\sqrt{x} + \sqrt{y})(\sqrt{x} - \sqrt{y})(x + y)(x^2 + y^2)$
- xix. Simplify: $\sqrt[5]{243x^2y^2z^{15}}$
- xx. Simplify: $\sqrt{45} - 3\sqrt{20} + 4\sqrt{5}$

(Section – II)

Note: Solve the following questions. (Any Three)

(8x3=24)

3. (a) If $x - 2 + \sqrt{3}$, find the value of $x - \frac{1}{x}$ and $\left(x - \frac{1}{x}\right)^2$ (04)

(b) Simplify: $\frac{\sqrt{a^2+2}+\sqrt{a^2-2}}{\sqrt{a^2+2}-\sqrt{a^2-2}}$ (04)

4. (a) If $3x + 4y = 11, xy = 12$, then find $27x^3 + 64y^3$ (04)

(b) If $m + n + p = 10$ and $mn + np + mp = 27$, then find the value of $m^2 + n^2 + p^2$. (04)

5. (a) Use log tables find the value of $\frac{0.678 \times 9.01}{0.0234}$ (04)

(b) If $\log 2 = 0.3010, \log 3 = 0.4771$ and $\log 5 = 0.6990$ then evaluate $\log \sqrt{3\frac{1}{3}}$ (04)

6. (a) Prove that $\log_a^{mn} = \log_a^m + \log_a^n$ (04)

(b) If $a + b = 10$ and $a - b = 6$, then find the value of $(a^2 + b^2)$ (04)