

عین کا درجہ (20) یا درجہ نصف کردہ C سچیتہ سا

سوال ← $\log_n^m = a \rightarrow a^n = m \quad \log_{mn}^{m^2 n} \rightarrow \log_n^{n^{2a+1}}$

$\rightarrow b = \frac{2a+1}{a+1} \quad \log_n^n = b$ (5)

$b = \frac{2a+1}{a+1} \rightarrow [b] = \left[\frac{2a+1}{a+1} \right] \rightarrow [b] = \left[1 + \frac{a}{a+1} \right]$

$\rightarrow [b] = \left[\frac{a}{a+1} \right] + 1 \rightarrow b = 1 + 0 = \boxed{1}$

سوال ← $f(x) = \sqrt{\frac{x}{\log \frac{x}{x}}}$

$\log \frac{x}{x} \rightarrow x > 0$

سین این بازہ کا عدد صحیح نہ ہاں $\Rightarrow 0 < x < 1$

ب) $\log(x^2 - x - 2)$

$\frac{1}{\sqrt{x^2-1} + 1} \rightarrow \sqrt{x^2-1} + 1 = 0 \rightarrow \sqrt{x^2-1} = -1$
 ← صحیح وقت اتنا ہی ہوا

$\log(x^2 - x - 2) \rightarrow x^2 - x - 2 \geq 0 \rightarrow (-\infty, -1) \cup (2, +\infty)$ (1)

$x^2 - 1 \geq 0 \rightarrow x^2 > 1 \rightarrow (-\infty, -1) \cup (1, +\infty)$ (2)

$\rightarrow (1) \cap (2) \rightarrow (-\infty, -1) \cup (2, +\infty)$

سوال ← $2 \log_x^a + \log \frac{\sqrt{x}}{a} = 2 \rightarrow 2 \log_a a + \log_a^2 = 2$

~~...~~ $\rightarrow \log_a^2 + \log_a^2 = 2$

$\rightarrow \log_a^2 + \frac{1}{\log_a^2} = 2 \rightarrow \log_a^2 \pm \log_a^2 = 1 \rightarrow \boxed{a = 2}$

(5)

$$(109 \frac{2}{3})x^2 + (1099)x - 10912 = 0 \quad \leftarrow \text{سوال ٤}$$

$$(1092 - 1093)x^2 + 1(1092)x - 1092 - 1092 = 0$$

$$(1092)x^2 - 78x^2 + 78x - 1092 - 78 = 0$$

$$\rightarrow (109 \frac{10}{3})x^2 - 78x^2 + 78x - 109(\frac{10}{3}) - 0/1250$$

$$\rightarrow (10910 - 1092)x^2 - 78x^2 + 78x - (10910 - 1092) - 0/12 = 0$$

$$(1 - 73)x^2 - 78x^2 + 78x - 07 - 78 = 0$$

$$\rightarrow 73x^2 + 78x - 1/1x \Rightarrow \frac{x}{x=1} = \frac{11}{3} \rightarrow 1 - (\frac{11}{3}) = \frac{12}{3}$$

$$109 \frac{1}{2} = 2,18 \quad 109 \frac{2}{3} = 7,2 \quad 109 \frac{10}{12} = 2, \quad \leftarrow \text{سوال ٤}$$

$$\frac{1092}{1092} = \frac{1}{2} \rightarrow \frac{1092}{109 \frac{10}{12}} = \frac{1}{2} \rightarrow \frac{1092}{10910 - 1092} = \frac{1}{2}$$

$$\rightarrow \frac{1092}{1 - 1092} = \frac{1}{2} \rightarrow 2 \cdot 1092 = 1 - 1092 \rightarrow 3 \cdot 1092 = 1 \rightarrow 1092 = \frac{1}{3}$$

$$\frac{1092}{1092} = \frac{12}{2} \rightarrow \frac{1092}{\frac{1}{3}} = \frac{12}{12} \rightarrow \frac{1}{\frac{1}{3} + 1092} = \frac{1}{\frac{1}{3} + \frac{12}{10}} = \frac{19}{12}$$

$$109 \frac{2}{3} = 1,2 \quad 109 \frac{3}{4} = 1,4 \quad 109 \frac{4}{12} = 2, \quad \leftarrow \text{سوال ٤}$$

~~$$109 \frac{2}{3} \times 109 \frac{3}{4} = 109 \frac{2}{3} \rightarrow 109 \frac{2}{3} \times 109 \frac{3}{4} \rightarrow 1,2 \times 1,4 = 109 \frac{2}{3}$$~~

$$\rightarrow 109 \frac{2}{3} = 2,12 \rightarrow \log \frac{4}{12} = \frac{109 \frac{4}{12}}{109 \frac{4}{12}} \rightarrow \log \frac{4}{12} \rightarrow \frac{1092 + 1093}{1092 + 1093}$$

$$\rightarrow \frac{1 + 1,4}{1,4 + 2,12} = \frac{2,4}{3,52} = \frac{50}{142}$$

$$\log_{\Lambda}^{\Lambda} = m$$

$$\log_{\Sigma}^{\Lambda} = l$$

$$\log_{\Sigma}^{\Lambda} \rightarrow \frac{\log_{\Lambda}^{\Lambda}}{\log_{\Lambda}^{\Sigma}}$$

سوال ۷ ←

$$\rightarrow \log_{\Lambda}^{\Sigma} = \log_{\Lambda}^{\Lambda} + \log_{\Lambda}^{\Sigma} = \log_{\Sigma}^{\Sigma} + \log_{\Sigma}^{\Lambda}$$

$$\rightarrow \frac{1}{\Sigma} \log_{\Lambda}^{\Sigma} + \frac{1}{\Lambda} \log_{\Lambda}^{\Sigma} \rightarrow \frac{1}{\Sigma} + \frac{1}{\Lambda} \log_{\Sigma}^{\Lambda}$$

$$\rightarrow \log_{\Lambda}^{\Sigma} = \log_{\Sigma}^{\Sigma} = \frac{1}{\Sigma} \log_{\Sigma}^{\Sigma} = \frac{1}{\Sigma}$$

$$\log_{\Lambda}^{\Lambda} = \log_{\Lambda}^{\Sigma} + \log_{\Sigma}^{\Lambda} \rightarrow \log_{\Sigma}^{\Sigma} + \log_{\Sigma}^{\Lambda} \rightarrow \frac{1}{\Sigma} \log_{\Sigma}^{\Sigma} + \frac{1}{\Lambda} \log_{\Sigma}^{\Lambda} = m$$

$$\rightarrow \frac{1}{\Sigma} + \frac{1}{\Lambda} \log_{\Sigma}^{\Lambda} = m \rightarrow \log_{\Sigma}^{\Lambda} = \frac{m-1}{\Lambda}$$

$$\rightarrow \log_{\Sigma}^{\Lambda} = \frac{\frac{1}{\Sigma} + \frac{1}{\Lambda} \log_{\Sigma}^{\Lambda}}{\frac{1}{\Sigma}} = \frac{\frac{1}{\Sigma} + \frac{1}{\Lambda} \left(\frac{m-1}{\Lambda} \right)}{\frac{1}{\Sigma}} = \frac{1 + \frac{m-1}{\Lambda}}{1}$$

$$\rightarrow \frac{1+m}{\Lambda} \rightarrow \frac{1+m}{\Lambda}$$

$$(2x)^{x-1} = \left(\frac{1}{x} \right)^{x^2} \rightarrow \left(\frac{1}{x} \right)^{x-1} = \left(\frac{1}{x} \right)^{x^2}$$

سوال ۸ ←

$$\rightarrow x^{x-1} = 1 - x^x \rightarrow x^{x-1} + x^x - 1 \rightarrow x = -1 \times x$$

$$\rightarrow \log_{\Lambda}^{\Lambda} = \log_{\Sigma}^{\Sigma} = \log_{\Sigma}^{\Lambda} \rightarrow x = \frac{1}{\Sigma} \checkmark$$

$$\log_{\Sigma}^{\Lambda} \rightarrow \frac{1}{\Sigma} \log_{\Sigma}^{\Lambda} \rightarrow \frac{1}{\Sigma}$$

$$\log_{\Sigma}^{\Lambda} = a \cdot \log_{\Lambda}^{\Sigma} = \frac{1}{\Sigma} (1+a)$$

سوال ۹ ←

$$\log_{\Lambda}^{\Sigma} = \frac{1}{\Sigma} (1 + \log_{\Sigma}^{\Lambda}) \Rightarrow \log_{\Lambda}^{\Sigma} = \frac{1}{\Sigma} + \frac{1}{\Sigma} \log_{\Sigma}^{\Lambda} \rightarrow \log_{\Lambda}^{\Sigma} = \frac{1}{\Sigma} + \log_{\Sigma}^{\Lambda}$$

$$\rightarrow \log_{\Lambda}^{\Sigma} - \log_{\Sigma}^{\Lambda} \rightarrow b = \frac{1}{\Sigma} \rightarrow 1. \log(1. \Sigma - \Sigma)$$

$$\rightarrow \log 100 = \frac{1}{\Sigma}$$

$$-[x^2 + bx + \frac{1}{c}] = 0 \rightarrow \frac{1}{b} \rightarrow \log \Sigma \rightarrow \log \Sigma = \frac{1}{b}$$

سوال ۱۰ ←

$$\frac{a}{b} = \frac{\log \varepsilon}{\varepsilon} \rightarrow \frac{\log r}{\varepsilon} = \frac{\log r}{r} \times$$

$$r \left(\frac{\log r}{r} \right) = 1 + \frac{c}{b} \rightarrow \frac{c}{b} = \log r - 1$$

$$\textcircled{1} \quad \frac{c}{b} = \log r - 1$$

$$\textcircled{2} \quad \frac{a}{b} = \frac{\log r}{r} \rightarrow \frac{c}{a} = \frac{\log r - 1}{\frac{\log r}{r}} \rightarrow \frac{\log r - \log 1}{\frac{\log r}{r}} \rightarrow \frac{\log \frac{1}{\omega}}{\frac{\log r}{r}}$$

$$\rightarrow \frac{\log \frac{1}{\omega}}{\frac{1}{r} \log r} = \frac{1}{\sqrt{r}} \log \rightarrow \left(\frac{1}{\sqrt{r}} \right) \frac{c}{a} = \left(\frac{1}{\sqrt{r}} \right) \log \frac{1}{\omega}$$

$$\left(\frac{1}{\omega} \right) \log \sqrt{r} \frac{1}{\sqrt{r}} \rightarrow \left(\frac{1}{\omega} \right) \log \frac{r^{-\frac{1}{2}}}{r} \rightarrow \left(\frac{1}{\omega} \right)^{-\frac{1}{2}}$$

$$\rightarrow \textcircled{\omega} \rightarrow \boxed{\sqrt{\omega}}$$