خاکهای جبران عقاب - یازدهم تجربی - تألیف ۲۴ A

۱- $x=1 \to 2^{A+B}=1=2^0 \Rightarrow A+B=0$; $x=2 \to 2^{2A+B}=2^2 \Rightarrow 2A+B=2$ $\Big\} \Rightarrow A=2$, $B=-1$ ✓ (۲)

$f(x)=2^{x-1} \xrightarrow[x=0]{} f(0)=2^{-1}$

۲- $\log_2^{2^x+15} = x+2 \Rightarrow 15+2^x = 2^{x+2} \to 15+2^{2x}=2^{x+2}$; $t=2^x$: $t^2+15=4t \to t^2-4t+15=0 \to (t-3)(t-5)=0$

$t=3 \Rightarrow x=\log_2^3$ (۲)

$t=5 \Rightarrow x=\log_2^5$

$\log_2^5+\log_2^3=\log_2^{15}$ ✓

۳- $(\log_{21}^3)^2+\log_{21}^{147}\cdot\log_{21}^{1323}=(\log_{21}^3)^2+\log_{21}^{7\times21}\cdot\log_{21}^{3\times21^2}=(\log_{21}^3)^2+(1+\log_{21}^3)(2+\log_{21}^3)$ (۲)

$=(\log_{21}^3)^2+(2-\log_{21}^3)(2-\log_{21}^3)=4$ ✓

$4-(\log_{21}^3)^2$

۴- $2\log^{1-x}+3\log^{1-x}=5 \Rightarrow \log^{1-x}=1 \Rightarrow 1-x=1^1=1 \Rightarrow x=0$, $\log_{4^{-9}}$ ✓ (۲)

۵- $\log^{(x^2+2x+3)(x-2)}=2 \Rightarrow (x^2+2x+4)(x-2)=8 \Rightarrow x^3=16$, $x=2^{\frac{4}{3}}$ (۲)

۶- $\log_{2\sqrt{2}}^x = \log_{2^{\frac{3}{2}}}^{2^{\frac{1}{2}}} = \frac{2}{3}\times2\times\log_2^2 = \frac{4}{3}$ ✓

۷- $\log^{(2-x)}-\log^{(2-x)^{-2}}=2 \Rightarrow 3\log^{2-x}=3 \Rightarrow \log^{2-x}=1 \Rightarrow 2-x=1$, $x=-8$ ✓ (۲)

۸- $\log_{2^{\frac{1}{4}}}^{2^8} = 8\log_2^2 = 8$ ✓ (۲)

۹- $3^{x^2-2}=2^{4x} \Rightarrow x^2-2=4x$, $x^2-4x-2=0$, $(x-2)^2=6 \to x-2=\sqrt{6}$, $-\sqrt{6}$ (۲)

$\log_6^{x-2}=\log_6^{\sqrt{6}}=\frac{1}{2}$ ✓

۱۰- $\log_{18}^8 = \frac{\log_2^8}{\log_2^{18}} = \frac{3}{1+2\log_2^3} = \frac{3}{1+\frac{12}{5}} = \frac{15}{17} = \frac{5}{7}$ ✓ $\log_{\frac{3}{2}}^{\frac{3}{2}}=\frac{3}{5}$ (۲)

۱۱- $\log_{12}^9 = \frac{\log_2^9}{\log_2^{12}} = \frac{2\log_2^3}{2+\log_2^3} = \frac{24}{5}=\frac{12}{8}$ ✓ $\log_2^3=1.8 \to \log_2^3=1.26$ (۲) دقت!

۱۲- $x=-1 \to a\log^2-a+b\log^2=0 \to (a+b)\log^2=a \Rightarrow \log^2=\frac{a}{a+b}=\log_2^{10^{\frac{a}{a+b}}}=\frac{a+b}{a}$ (۲)

$1+\log_2^5=1+\frac{b}{a} \Rightarrow \sqrt{2}^{\frac{b}{a}}=\sqrt{2}^{\log_2^5}$

$5^{\log_2^{\sqrt{2}}}=5^{\frac{1}{2}}=\sqrt{5}$ ✓