1. Logarithm of $32\sqrt[5]{4}$ to the base $2\sqrt{2}$ is

(a) 3.6 (b) 5

(c) 5.6 (d) None of these

2. If $\log_e\left(\frac{a+b}{2}\right)=\frac{1}{2}(\log_e a+\log_e b)$, then relation between a and b will be **[UPSEAT 2000]**

(a) $a=b$ (b) $a=\frac{b}{2}$

(c) $2a=b$ (d) $a=\frac{b}{3}$

3. The value of $\log_3 4\log_4 5\log_5 6\log_6 7\log_7 8\log_8 9$ is **[IIIT Allahabad 2000]**

(a) 1 (b) 2

(c) 3 (d) 4

4. $\log_7\log_7\sqrt{7(\sqrt{7\sqrt{7}})}=$

(a) $3\log_2 7$ (b) $1-3\log_3 7$

(c) $1-3\log_7 2$ (d) None of these

5. $7\log\left(\frac{16}{15}\right)+5\log\left(\frac{25}{24}\right)+3\log\left(\frac{81}{80}\right)$ is equal to **[EAMCET 1990]**

(a) 0 (b) 1

(c) $\log 2$ (d) $\log 3$

6. If $\log_4 5=a$ and $\log_5 6=b$, then $\log_3 2$ is equal to

(a) $\frac{1}{2a+1}$ (b) $\frac{1}{2b+1}$

(c) $2ab+1$ (d) $\frac{1}{2ab-1}$

7. If $\log_k x.\log_5 k=\log_x 5, k\neq 1, k>0$, then x is equal to

(a) k (b) $\frac{1}{5}$

(c) 5 (d) None of these

8. If $a^2+4b^2=12ab$, then $\log(a+2b)$ is

(a) $\frac{1}{2}[\log a+\log b-\log 2]$ (b) $\log\frac{a}{2}+\log\frac{b}{2}+\log 2$

(c) $\frac{1}{2}[\log a+\log b+4\log 2]$ (d) $\frac{1}{2}[\log a-\log b+4\log 2]$

9. If $\log_{10} x=y$, then $\log_{1000} x^2$ is equal to

(a) y^2 (b) $2y$

(c) $\frac{3y}{2}$ (d) $\frac{2y}{3}$

10. If $x=\log_a(bc), y=\log_b(ca), z=\log_c(ab)$, then which of the following is equal to 1

(a) $x+y+z$

(b) $(1+x)^{-1}+(1+y)^{-1}+(1+z)^{-1}$

(c) xyz

(d) None of these

11. If $a=\log_{24}12, b=\log_{36}24$ and $c=\log_{48}36$, then $1+abc$ is equal to **[SCRA 2000]**

(a) $2ab$ (b) $2ac$

(c) $2bc$ (d) 0

12. If $\log_{10}2=0.30103, \log_{10}3=0.47712$, the number of digits in $3^{12}\times 2^8$ is

(a) 7 (b) 8

(c) 9 (d) 10

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13. The set of real values of x satisfying $\log_{1/2}(x^2-6x+12) \geq -2$ is

(a) $(-\infty, 2]$ (b) $[2, 4]$

(c) $[4, +\infty)$ (d) None of these

14. If $\log_{0.04}(x-1) \geq \log_{0.2}(x-1)$ then x belongs to the interval

(a) $(1, 2]$ (b) $(-\infty, 2]$

(c) $[2, +\infty)$ (d) None of these

15. The set of real values of x for which $\log_{0.2}\frac{x+2}{x} \leq 1$ is

(a) $\left(-\infty, -\frac{5}{2}\right] \cup (0, +\infty)$ (b) $\left[\frac{5}{2}, +\infty\right)$

(c) $(-\infty, -2) \cup (0, +\infty)$ (d) None of these

1. A
2. A
3. B
4. C
5. C
6. D
7. B,C
8. C
9. D
10. B
11. C
12. C
13. B
14. C
15. A

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