	0	OAKITIM3	MATHEMATICS
	Ι	LEVEL-I	
	[SINGLE COR]	RECT CHOICE TY	PE]
Consider the equat	tion $\log_{10}(x + \pi) = \log_{10}(x) + 1$	$\log_{10}(\pi)$, where x is a	positive real number. This equation has -
(A) no solutions		(B) exactly 1 solu	ition
(C) exactly 2 solu	tions	(D) more than 2,	but infinitely many solutions
The sum of all the	e solutions to the equation 21	$\log x - \log(2x - 75) =$	= 2 is
(A) 30	(B) 350	(C) 75	(D) 200
The number of sol	ution of $\log(2x) = 2 \log (4x)$	– 15) is -	
(A) 1	(B) 2	(C) 3	(D) infinite
Solution set of the	e equation $\log(8 - 10x - 12x)$	x^{2}) = 3log (2x - 1) is	-
(A) {1}	(B) $\{3, 2\}$	(C) {5}	(D)
Let $x = 2^{\log 3}$ and y	$= 3^{\log 2}$ where base of the logar	rithm is 10, then which	h one of the following holds good ?
(A) $2x < y$	(B) $2y < x$	(C) $3x = 2y$	(D) $y = x$
		LEVEL-II	
The product of al $\log_3 54$, is	l values of x which make the	e following statemen	t true $(\log_3 x)(\log_5 9) - \log_x 25 + \log_3 2 =$
(A) $\sqrt{5}$	(B) 5	(C) $5\sqrt{5}$	(D) 25
Suppose that, log	$g_{10}(x-2) + \log_{10}y = 0$ and	$\sqrt{x} + \sqrt{y-2} = \sqrt{x+y}$	y y
Then the value of	(x + y), is		
(A) 2	(B) $2\sqrt{2}$	(C) 2 + $2\sqrt{2}$	(D) $4 + 2\sqrt{2}$
The real value of a	x for which the statement log ₆	$9 - \log_9 27 + \log_8 x = 1$	$\log_{64} x - \log_6 4$ holds true, is
(A) 1/2	(B) 1/4	(C) 1/8	(D) 1/16
The real x and y sate	atisfy simultaneously $\log_8 x + \log_8 x$	$\log_4 y^2 = 5$ and $\log_8 y$	+ $\log_4 x^2 = 7$ then the value of xy is equal
(A) 2^9	(B) 2^{12}	(C) 2^{18}	(D) 2^{24}
	[MULTIPLE CO]	RRECT CHOICE T	YPE]
The equation $\frac{\log_8}{(\log_8)}$	$\frac{(8/x^2)}{(8/x^2)^2} = 3$ has		
(A) no integral solution		(B) one natural solution	
(C) two real solutions		(D) one irrational solution	
In which of the fo	bllowing case(s) the real number	er 'm' is greater than	the real number 'n' ?
(A) m = $(\log_2 5)^2$ and n = $\log_2 20$		(B) m = $\log_{10}^{2} 2$ and n = $\log_{10}^{3} \sqrt[3]{10}$	
(C) m = $\log_{10} 5.\log_{10} 5$	$g_{10}^2 20 + (\log_{10}^2 2)^2$ and $n = 1$	(D) $m = \log_{1/2} \left(\frac{1}{3} \right)$) and $n = \log_{1/3}\left(\frac{1}{2}\right)$
	Consider the equations (A) no solutions (C) exactly 2 solutions (C) exactly 2 solutions (A) 30 The number of solution set of the (A) 1 Solution set of the (A) {1} Let $x = 2^{\log 3}$ and y (A) $2x < y$ The product of all $\log_3 54$, is (A) $\sqrt{5}$ Suppose that, $\log 3$ Then the value of (A) 2 The real value of (A) 1/2 The real x and y satisfies (A) 2 ⁹ The equation $\frac{\log_3}{(\log 3)}$ (C) two real solution In which of the form (A) m = $(\log_2 5)^2$ and (C) m = $\log_{10} 5.\log 3$	$[SINGLE COR]$ Consider the equation $\log_{10}(x + \pi) = \log_{10}(x) + 1$ (A) no solutions (C) exactly 2 solutions The sum of all the solutions to the equation 2 1 (A) 30 (B) 350 The number of solution of $\log(2x) = 2 \log (4x + (A) - 1) + (B) (B) (B) (B) (B) (B) (B) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C$	LEVEL-I [SINGLE CORRECT CHOICE TY Consider the equation $\log_{10}(x + \pi) = \log_{10}(x) + \log_{10}(\pi)$, where x is a (A) no solutions (B) exactly 2 solutions (D) more than 2, The sum of all the solutions to the equation 2 log x - log(2x - 75) = (A) 30 (B) 350 (C) 75 The number of solution of $\log(2x) = 2 \log (4x - 15)$ is - (A) 1 (B) 2 (C) 3 Solution set of the equation $\log(8 - 10x - 12x^2) = 3\log (2x - 1)$ is (A) 1 (B) 3, 2} (C) (5] LEVEL-II The product of the equation of x which make the following statement $\log_3 54$, is (A) $\sqrt{5}$ (B) 5 (C) $5\sqrt{5}$ Suppose that, $\log_{10}(x - 2) + \log_{10}y = 0$ and $\sqrt{x} + \sqrt{y - 2} = \sqrt{x + y}$ Then the value of (x + y), is (A) 2^2 (C) $2 + 2\sqrt{2}$ The real value of x for which the statement $\log_6 9 - \log_2 27 + \log_8 x = (A) 1/2$ (B) $2\sqrt{2}$ (C) $1/8$ The real value of x for which the statement $\log_6 9 - \log_2 27 + \log_8 x = (A) 1/2$

12. Select the correct statement.

(A) $\log_3 19 \cdot \log_{1/7} 3 \cdot \log_4 \left(\frac{1}{7}\right) < 2$

(B) The equation $\log_{1/3}(x^2 + 8) = -2$ has two real solutions.

(C) Let N = $\log_2 15 \cdot \log_{1/6} 2 \cdot \log_3 \left(\frac{1}{6}\right)$. The greatest integer which is less than or equal to N is 3.

- (D) The equation $\log_4 x + \log_4 (x + 2) = \log_4 (3x)$ has no prime solution.
- 13. For the equation $\log_{3\sqrt{x}} x + \log_{3x} \sqrt{x} = 0$, which of the following do not hold good?
 - (A) no real solution
 - (C) one integral solution

- (B) one prime solution
- (D) no irrational solution

[SUBJECTIVE TYPE]

- 14. If $\log_{\sqrt{2}} \sqrt{x} + \log_2 x + \log_4(x^2) + \log_8(x^3) + \log_{16}(x^4) = 40$ then x is equal to
- **15.** If $4^{\log_9 3} + 9^{\log_2 4} = 10^{\log_x 83}$, $(x \in \mathbb{R})$, then x is

Answers

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1. (B) 2. (D) **3.** (B) (D) 5. (D) 6. (C) 7. (C) 8. (C) **9.** (A) 10. (BC) 4. 11. (AD) 12. (BD) 13. (ABD) 14. 256 15. 10