

1. The ratio compounded of duplicate ratio of 4 : 5, triplicate ratio of 1 : 3, sub duplicate ratio of 81 : 256 and sub triplicate ratio of 125 : 512 is
 - a) 4 : 512
 - b) 3 : 32
 - c) 1 : 120
 - d) None of these
2. If $x : y = 3 : 4$, the value of $x^2y + xy^2 : x^3 + y^3$ is
 - a) 13 : 12
 - b) 12 : 13
 - c) 21 : 31
 - d) None of these
3. If four numbers $1/2, 1/3, 1/5, 1/x$ are proportional then x is
 - a) $6/5$
 - b) $5/6$
 - c) $15/2$
 - d) None of these
4. The mean proportional between $12x^2$ and $27y^2$ is
 - a) $18xy$
 - b) $81xy$
 - c) $8xy$
 - d) None of these
5. If $p/q = r/s = p-r/q-s$, the process is called
 - a) Subtrahendo
 - b) Addendo
 - c) Invertendo
 - d) None of these
6. If $a/b = c/d$, implies $(a+b)/(a-b) = (c+d)/(c-d)$, the process is called
 - a) Componendo
 - b) Dividendo
 - c) Componendo and Dividendo
 - d) None of these
7. Which is True?
 - a) $2^0 > (1/2)^0$
 - b) $2^0 < (1/2)^0$
 - c) $2^0 = (1/2)^0$
 - d) None of these
8. If $x^{1/p} = y^{1/q} = z^{1/r}$ and $xyz = 1$, then the value of $p + q + r$ is
 - a) 1
 - b) 0
 - c) $1/2$
 - d) None of these
9. $\log (1/81)$ to the base 9 is equal to
 - a) 2
 - b) $1/2$
 - c) -2
 - d) None of these

10. $\log 0.0625$ to the base 2 is equal to
a) 4
b) 5
c) 1
d) None of these
11. If $\log_2 x + \log_4 x + \log_{16} x = 21/4$, these x is equal to
a) 8
b) 4
c) 16
d) None of these
12. Given that $\log_{10} 2 = x$ and $\log_{10} 3 = y$, the value of $\log_{10} 60$ is expressed as
a) $x - y + 1$
b) $x + y + 1$
c) $x - y - 1$
d) None of these
13. One student is asked to divide a half of a number by 6 and other half by 4 and then to add the two quantities. Instead of doing so the student divides the given number by 5. If the answer is 4 short of the correct answer then the actual answer is
a) 320
b) 400
c) 480
d) None of these
14. If a number of which the half is greater than $\frac{1}{5}$ th of the number by 15 then the number is
a) 50
b) 40
c) 80
d) None of these
15. If the roots of the equations $2x^2 + 8x - m^3 = 0$ are equal then value of m is
a) -3
b) -1
c) 1
d) -2
16. The roots of the equation $x^2 + (2p - 1)x + p^2 = 0$ are real if.
a) $p \geq 1$
b) $p \leq 4$
c) $p \geq 1/4$
d) $p \leq 1/4$
17. If one root of $5x^2 + 13x + p = 0$ be reciprocal of the other then the value of p is
a) -5
b) 5
c) $1/5$
d) $-1/5$

18. If the root of the equation $x^2 - 8x + m = 0$ exceeds the other by 4 then the value of m is
- m = 10
 - m = 11
 - m = 9
 - m = 12
19. The equation of line joining the point (3, 5) to the point of intersection of the lines $4x + y - 1 = 0$ and $7x - 3y - 35 = 0$ is
- $2x - y = 1$
 - $3x + 2y = 19$
 - $12x - y - 31 = 0$
 - None of these
20. The total cost curve of the number of copies photograph is linear. The total cost of 5 and 17 copies of a photographs are Rs.80 and 116 respectively. Then the total cost for 10 copies of the photographs is
- Rs. 140
 - Rs. 95
 - Rs. 150
 - Rs. 130
21. The equation of the line passing through the point of intersection of $2x + 3y - 5 = 0$ and $7x - 5y - 2 = 0$ and perpendicular to the lines $2x - 3y + 14 = 0$ is
- $3x + 2y + 5 = 0$
 - $3x + 2y - 5 = 0$
 - $2x - 3y + 5 = 0$
 - $2x - 3y - 5 = 0$
22. A factory produces 200 bulbs for a total cost of Rs.800/- and 400 bulbs for Rs.1200/-. The equation of the total cost line is
- $2x - y + 100 = 0$
 - $2x + y + 400 = 0$
 - $2x - y + 400 = 0$
 - None
23. If an investment of Rs.60000 and Rs.70000 respectively yields an income of Rs.5750, Rs.6500 an investment of Rs.90000 would yield income of Rs. _____
- 7500
 - 8000
 - 7750
 - 7800
24. The line joining (-1, 1) and (2, -2) and the line joining (1, 2) and (2, k) are parallel to each other for the following value of k
- 1
 - 0
 - 1
 - None
25. If $16 \times 8^{n+2} = 2^m$ then m is equal to
- | | |
|------------|-------------|
| (a) $n+8$ | (b) $2n+10$ |
| (c) $3n+2$ | (d) $3n+10$ |

*****ALL THE BEST *****