CA Foundation Maths

Chp 1:- Ratio, Proportion, Indices & Logarithm

Time:- 30 mins

1. If x: y = 2: 3, then find (5x+2y): (3x-y)
   (a) 13/3
   (b) 16/3
   (c) 19/3
   (d) 7/3
2. The ratio compounded of 2:3, 9:4, 5:6 and 8: 10 is
   (a) 1: 1
   (b) 1:5
   (c) 3: 8
   (d) none of these
3. The sub-triplicate ratio of 8: 27
   (a) 27: 8
   (b) 24: 81
   (c) 2: 3
   (d) none of these
4. The ratio of the number of boys and girls in a school is 2:5. if there are 280 students in the school, find number of girls in the school
   (a) 200
   (b) 250
   (c) 150
   (d) 100
5. The value of of $(\log_b a \log_c b \log_a c)^3$ =
   (a) 1
   (b) 3
   (c) $(\log_b C)^3$
   (d) $(\log_c b)^3$
6. The Third Proportional to 15 and 20 is
   (a) 80/3
   (b) 80
   (c) 80/7
   (d) 120
7. If x : y : z = 2:3:5 if x + y + z = 60, then the value of z
   (a) 30
   (b) 15
   (c) 9
   (d) 12

8. P, Q and R three cities. The ratio of average temperature between P and Q is 11: 12 and that between P and R is 9:8. The ratio between the average temperature Q and R

(a) 22.27

(b) 27.22

(c) 32: 33

(d) none

9. If $\frac{p}{q}=\frac{r}{s}=\frac{p-r}{q-s}$, the process is called

(a) Subtrahendo

(b) Componendo

(c) Alternendo

(d) none of these

10. The value of $\left(\frac{x^a}{x^b}\right)^{\left(a^2+ab+b^2\right)}\times\left(\frac{x^b}{x^c}\right)^{\left(b^2+bc+c^2\right)}\times\left(\frac{x^c}{x^a}\right)^{\left(c^2+ca+a^2\right)}$

(a) 1

(b) 0

(c) -1

(d) none of these

11. If $x^2+y^2=7xy$, then $\log\frac{1}{3}(x+y)=$ then x is

(a) (logx+logy)

(b) ½(logx+logy)

(c) 1/3(logx+logy)

(d) 3(logx/logy)

12. The third proportional between (a^2-b^2) and $(a+b)$ is :

(a) $\frac{a+b}{a-b}$

(b) $\frac{a-b}{a+b}$

(c) $\frac{(a-b)^2}{a+b}$

(d) $\frac{(a+b)^2}{a-b}$

13. If $2^x = 3^y = 6^z$ then $\frac{1}{x} + \frac{1}{y} =$

(a) $\frac{1}{z}$

(b) $\frac{1}{z} - \frac{1}{x}$

(c) $\frac{1}{z} + \frac{1}{x}$

(d) 0

14. The value of $\log_{64} 512$ is

(a) 9

(b) 9/2

(c) 9/4

(d) 3/2

15. If $x = 3^{1/4} + 3^{-1/4}$ and $y = 3^{1/4} - 3^{-1/4}$, then the value of $3\left(x^2 + y^2\right)^2$ will be

(a) 12

(b) 18

(c) 46

(d) 64

16. If $a = \log_{24} 12$, $b = \log_{36} 24$, $b = \log_{48} 36$ then prove that 1 + abc =

(a) 2bc

(b) 2ca

(c) 2ba

(d) 3bc

17. The ratio of two numbers is 15: 19. If a certain number is added to each term of the ratio it become 8:9 What is the number added to each of the ratio?

(a) 6

(b) 15

(c) 17

(d) 23

18. The value of $\frac{2^n + 2^{n-1}}{2^{n+1} - 2^n}$ is

(a) 1/2

(b) 3/2

(c) 2/3

(d) 2

19. If $x = 5^{1/3} + 5^{-1/3}$, $5x^3-15x$ is given by

(a) 25

(b) 26

(c) 27

(d) 30

20. If $\frac{p}{q} = -\frac{2}{3}$ then the value of $\frac{2p+q}{2p-q}$ is:

(a) 1

(b) -1/7

(c) 1/7

(d) 7

21. The ratio of the prices of two houses was 16: 23. Two years later when the price of the first has increased by 10% and that of the second by Rs. 477, the ratio of the prices becomes 11: 20. Find the original prices of the two houses.

(a) Rs. 848, Rs. 1,219.

(b) Rs. 838, Rs. 1,119.

(c) Rs. 828, Rs. 1,219.

(d) Rs. 848 Rs. 1,229.

22. 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