VISHESH ACADEMY OF COMMERCE

DSS-33, OLD COURT COMPLEX NEAR FAWARA CHOWK HISAR

BUSINESS MATHS AND LOGICAL REASONING & STATISTICS

CA FOUNDATION

TEST – CHAPTER-1 RATIO AND PROPORTION, INDICES, LOGARITHMS

TIME: 1 Hrs.   **Marks: 30**

1. Two numbers are in the ratio 2 : 3 and the difference of their squares is 320. The numbers are :
(a) 12,18
(b) 16,24
(c) 14,21
(d) None.

2. If p : q is the sub-duplicate ratio of $p - x^2$: $q - x^2$, then x^2 is :
(a) $\dfrac{p}{p + q}$
(b) $\dfrac{q}{p + q}$
(c) $\dfrac{qp}{p - q}$
(d) None

3. An alloy is to contain copper and zinc in the ratio 9 : 4. The zinc required to melt with 24 kg of copper is :
(a) $10\dfrac{2}{3}$ kg
(b) $10\dfrac{1}{3}$ kg
(c) $9\dfrac{2}{3}$ kg
(d) 9kg

4. $7 \log \left(\dfrac{16}{15}\right) + 5 \log \left(\dfrac{25}{24}\right) + 3 \log \left(\dfrac{81}{80}\right)$ is equal to :
(a) 0
(b) 1
(c) log 2
(d) log 3

5. Two numbers are in the ratio 7 : 8. If 3 is added to each of them, their ratio becomes 8 : 9. The numbers are :
(a) 14,16
(b) 24,27
(c) 21,24
(d) 16,18

6. A box contains Rs. 56 in the form of coins of one rupee, 50 paise and 25 paise. The number of 50 paise coin is double the number of 25 paise coins and four times the numbers of one rupee coins. The numbers of 50 paise coins in the box is :
(a) 64
(b) 32
(c) 16
(d) 14

7. Value of $(a^{1/8} + a^{-1/8})\,(a^{1/8} - a^{-1/8})\,(a^{1/4} + a^{-1/4})\,(a^{1/2} + a^{-1/2})$ is :
(a) $a + \dfrac{1}{a}$
(b) $a - \dfrac{1}{a}$
(c) $a^2 + \dfrac{1}{a^2}$
(d) $a^2 - \dfrac{1}{a^2}$

8. What must be added to each term of the ratio 49 : 68, so that it becomes 3:4?
(a) 3
(b) 5
(c) 8
(d) 9

9. If $\log_{10000} x = \dfrac{-1}{4}$, then x is given by:
(a) $\dfrac{1}{100}$
(b) $\dfrac{1}{10}$
(c) $\dfrac{1}{20}$
(d) None of these.

10. Eight people are planning to share equally the cost of a rental car. If one person withdraws from the arrangement and the others share equally entire cost of the car, then the share of each of the remaining persons increased by:
(a) 1/9
(b) 1/8
(c) 1/7
(d) 7/8

11. A bag contains Rs. 187 in the form of 1 rupee, 50 paise and 10 paise coins in the ratio 3:4:5. Find the number of each type of coins :
(a) 102,136,170
(b) 136,102,170
(c) 170, 102, 136
(d) None.

12. Simplification of $\frac{x^{m+3n} . x^{4m-9n}}{x^{6m-6n}}$ is:
(a) x^m
(b) x^{-m}
(c) x^n
(d) x^{-n}

13. If log (2a - 3b) = log a - log b, then a = :
(a) $\frac{3b^2}{2b-1}$
(b) $\frac{3b}{2b-1}$
(c) $\frac{b^2}{2b+1}$
(d) $\frac{3b^2}{2b+1}$

14. On simplification $\frac{1}{1+Z^{a-b}+Z^{a-c}} + \frac{1}{1+Z^{b-c}+Z^{b-a}} + \frac{1}{1+Z^{c-a}+Z^{c-b}}$ reduces to:
(a) $\frac{1}{Z^{2(a+b+c)}}$
(b) $\frac{1}{Z^{(a+b+c)}}$
(c) 1
(d) 0

15. Ratio of earnings of A and B is 4 : 7. If the earnings of A increase by 50% and those of B decrease by 25%, the new ratio of their earning becomes 8 : 7. What is A's earning ?
(a) Rs. 21,000
(b) Rs. 26,000
(c) Rs. 28,000
(d) Data inadequate.

16. P, Q and R are 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 of Q and R is :
(a) 22:27
(b) 27:22
(c) 32:33
(d) None.

17. $\frac{1}{\log_{ab}(abc)} + \frac{1}{\log_{bc}(abc)} + \frac{1}{\log_{ca}(abc)}$ is equal to:
(a) 0
(b) 1
(c) 2
(d) -1

18. Number of digits in the numeral for 2^{64}. [Given log 2 = 0.30103]:
(a) 18 digits
(b) 19 digits
(c) 20 digits
(d) 21 digits.

19. Rs. 407 are to be divided among A, B and C so that their shares are in the ratio $\frac{1}{4} : \frac{1}{5} : \frac{1}{6}$. The respective shares of A, B, C are :
(a) Rs.165.Rs.132.Rs.no
(b) Rs. 165, Rs. 110, Rs. 132
(c) Rs. 132, Rs. 110, Rs. 165
(d) Rs. 110, Rs.132, Rs. 165

20. The incomes of A and B are in the ratio 3 : 2 and their expenditures in the ratio 5 : 3. If each saves Rs. 1,500, then B's income is :
(a) Rs. 6,000
(b) Rs. 4,500
(c) Rs. 3,000
(d) Rs. 7,500

21. If $4^x = 5^y = 20^z$ then z is equal to :

(a) xy

(b) $\frac{x+y}{xy}$

(c) $\frac{1}{xy}$

(d) $\frac{xy}{x+y}$

22. $\left(\frac{\sqrt{3}}{9}\right)^{5/2}$ $\left(\frac{9}{3\sqrt{3}}\right)^{7/2}$ × 9 is equal to

(a) 1

(b) $\sqrt{3}$

(c) $3\sqrt{3}$

(d) $\frac{3}{9\sqrt{3}}$

23. The value $\frac{\log_3 8}{\log_9 16 . \log_4 10}$ is :

(a) $3 \log_{10} 2$

(b) $7 \log_{10} 3$

(c) $3 \log_e z$

(d) None.

24. In 40 litres mixture of glycerine and water, the ratio of glycerine and water is 3:1. The quantity of water added in the mixture in order to make this ratio 2:1 is:

(a) 15 litres

(b) 10 litres

(c) 8 litres

(d) 5 litres.

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

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

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

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

(d) $\frac{(a+b)^3}{a-b}$

26. If $2^x - 2^{x-1} = 4$ then x^x is equal to :

(a) 7

(b) 3

(c) 27

(d) 9

27. If A, B and C started a business by investing Rs. 1,26,000, Rs. 84,000 and Rs. 2,10,000. If at the end of the year profit is Rs. 2,42,000 then the share of each is :

(a) 72,600, 48,400, 1,21,000

(b) 48,400, 1,21,000, 72,600

(c) 72,000,49,000,1,21,000

(d) 48,000,1,21,400,72,600

28. log 144 is equal to:

(a) 2 log 4 + 2 log 2

(b) 4 log 2 + 2 log 3

(c) 3 log 2+ 4 log 3

(d) 3 log 2 - 4 log 3

29. In what ratio should tea worth Rs. 10 per kg be mixed with tea worth Rs. 14 per kg, so that the average price of the mixture may be Rs. 11 per kg?

(a) 2:1

(b) 3:1

(c) 3:2

(d) 4:3

30. The ages of two persons are in the ratio 5:7. Eighteen years ago their ages were in the ratio of 8:13, their present ages (in years) are:

(a) 50, 70

(b) 70, 50

(c) 40,56

(d) None.

ANSWER KEYS
TEST – CHAPTER-1 RATIO AND PROPORTION, INDICES, LOGARITHMS

1. B	2. D	3. A	4. C	5. C	6. A	7. B	8. C	9. B	10. C
11. A	12. B	13. A	14. C	15. D	16. B	17. C	18. C	19. A	20. A
21. D	22. A	23. A	24. D	25. D	26. C	27. A	28. B	29. B	30. A