

Arithmetic (Level 1)**MCQ Test, Set 01**

Time: 30 minutes

Maximum marks: 25

Name: _____ Class: _____ Date: _____

- There are 25 questions. Each has exactly one correct answer: choose A, B, C or D.
- Each correct answer carries 1 mark. There is no negative marking.
- The key sheet and worked solutions are at the end of this test.

- A school team played 30 matches and won 18 of them. The ratio of the number of matches played to the number of matches lost is
A. 2 : 5 **B.** 5 : 2 **C.** 3 : 2 **D.** 5 : 3
- If ₹1560 is divided into two parts in the ratio 5 : 7, then the larger part is
A. ₹260 **B.** ₹650 **C.** ₹130 **D.** ₹910
- If $1\frac{1}{2} : 2\frac{1}{3} : 1\frac{3}{4}$ is $A : B : C$, then
A. $C > B > A$ **B.** $B > C > A$ **C.** $A > B > C$ **D.** $B > A > C$
- The fourth proportional to 3, 7 and 12 is
A. 1.75 **B.** 16 **C.** 28 **D.** $5\frac{1}{7}$
- The mean proportional between 18 and 32 is
A. 576 **B.** 14 **C.** 25 **D.** 24
- If $a : b = 5 : 2$, then $\frac{a+b}{a-b} =$
A. $\frac{7}{3}$ **B.** $\frac{7}{2}$ **C.** $\frac{5}{2}$ **D.** $\frac{3}{7}$
- If 5 kg of rice can be served to 40 people, the rice required for 72 such people is
A. $2\frac{7}{9}$ kg **B.** 0.125 kg **C.** 576 kg **D.** 9 kg
- 42 men can do a work in 30 days. 35 men will do the same work in
A. 36 days **B.** 25 days **C.** 37 days **D.** 49 days
- $\frac{3}{16}$ expressed as a percentage is
A. 16% **B.** 1.875% **C.** 18.75% **D.** $\frac{3}{16}\%$
- In an election between two candidates, one got 60% of the valid votes and 15% of the votes were invalid. If the total number of votes was 9000, the number of valid votes the other candidate got is
A. 3060 **B.** 3600 **C.** 1350 **D.** 4590
- The price of a cooler is ₹1600. If it is increased by 15%, the new price is
A. ₹1360 **B.** ₹1615 **C.** ₹1840 **D.** ₹240

12. If A is 50% more than B , then B is less than A by
A. 25% B. 50% C. $66\frac{2}{3}\%$ D. $33\frac{1}{3}\%$
-
13. The population of a town is 40000 and it increases at 5% per annum. Its population after 2 years will be
A. 44,000 B. 44,100 C. 42,000 D. 46,305
-
14. By selling 24 pens, a vendor loses the selling price of 4 pens. His loss percent is
A. 4% B. 20% C. $16\frac{2}{3}\%$ D. $14\frac{2}{7}\%$
-
15. The marked price of a saree is ₹1800 and the discount is 15%. The selling price is
A. ₹1785 B. ₹2070 C. ₹1530 D. ₹270
-
16. Two radios are sold at ₹960 each, one at 20% profit and the other at 20% loss. On the whole there is a
A. loss of 4% B. neither profit nor loss
C. loss of 2% D. gain of 4%
-
17. If the cost price of 25 articles equals the selling price of 20 articles, then there is a
A. 25% loss B. 25% gain C. 5% gain D. 20% gain
-
18. The average of five consecutive odd numbers is 47. The largest of them is
A. 49 B. 51 C. 55 D. 43
-
19. The average of 15 numbers is 32. If each number is increased by 6, the new average is
A. 38 B. 122 C. 32 D. 32.4
-
20. 90 km/h in m/s is
A. 15 B. 50 C. 25 D. 324
-
21. A man goes to a place at 40 km/h and returns by the same route at 60 km/h. His average speed for the whole journey is
A. 48 km/h B. 50 km/h C. 52 km/h D. 100 km/h
-
22. The speeds of two cyclists are 30 km/h and 50 km/h. The ratio of the times they take to cover the same distance is
A. 3 : 5 B. 8 : 5 C. 5 : 3 D. 3 : 8
-
23. A 250 m long train crosses a signal post in 10 seconds. Its speed is
A. $6\frac{17}{18}$ km/h B. 90 km/h C. 25 km/h D. 45 km/h
-
24. The simple interest on ₹3500 at 6% per annum for 4 years is
A. ₹4340 B. ₹210 C. ₹1050 D. ₹840
-
25. The amount on ₹10000 at 10% per annum for 2 years, compounded annually, is
A. ₹11,000 B. ₹12,000 C. ₹12,100 D. ₹2100
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Key sheet

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

Solutions

1. A school team played 30 matches and won 18 of them. The ratio of the number of matches played to the number of matches lost is

$$\text{Matches lost} = 30 - 18 = 12$$

$$\text{Required ratio} = \frac{30}{12} = \frac{5}{2} = 5 : 2$$

Ans: (B) 5 : 2

2. If ₹1560 is divided into two parts in the ratio 5 : 7, then the larger part is

$$\text{Larger part} = \frac{7}{5+7} \times 1560 = \frac{7}{12} \times 1560 = 910$$

Ans: (D) ₹910

3. If $1\frac{1}{2} : 2\frac{1}{3} : 1\frac{3}{4}$ is $A : B : C$, then

$$A : B : C = \frac{3}{2} : \frac{7}{3} : \frac{7}{4}$$

$$\text{L.C.M of the denominators} = 12$$

$$= \frac{18}{12} : \frac{28}{12} : \frac{21}{12} = 18 : 28 : 21$$

$$\therefore B > C > A$$

Ans: (B) $B > C > A$

4. The fourth proportional to 3, 7 and 12 is

$$3 : 7 :: 12 : x \Rightarrow 3x = 7 \times 12$$

$$x = \frac{84}{3} = 28$$

Ans: (C) 28

5. The mean proportional between 18 and 32 is

$$\text{Mean proportional} = \sqrt{18 \times 32} = \sqrt{576} = 24$$

Ans: (D) 24

6. If $a : b = 5 : 2$, then $\frac{a+b}{a-b} =$

By componendo and dividendo:

$$\frac{a+b}{a-b} = \frac{5+2}{5-2} = \frac{7}{3}$$

Ans: (A) $\frac{7}{3}$

7. If 5 kg of rice can be served to 40 people, the rice required for 72 such people is

$$\text{Direct proportion: } x_1 y_2 = x_2 y_1$$

$$y = \frac{72 \times 5}{40} = 9$$

Ans: (D) 9 kg

8. 42 men can do a work in 30 days. 35 men will do the same work in

$$\text{Inverse proportion: } x_1 y_1 = x_2 y_2$$

$$42 \times 30 = 35 \times y \Rightarrow y = 36$$

Ans: (A) 36 days

9. $\frac{3}{16}$ expressed as a percentage is

$$\frac{3}{16} = \left(\frac{3}{16} \times 100\right)\% = \frac{300}{16}\% = 18.75\%$$

Ans: (C) 18.75%

10. In an election between two candidates, one got 60% of the valid votes and 15% of the votes were invalid. If the total number of votes was 9000, the number of valid votes the other candidate got is

$$\text{Valid votes} = 85\% \text{ of } 9000 = 7650$$

$$\text{Other candidate} = 40\% \text{ of } 7650 = 3060$$

Ans: (A) 3060

11. The price of a cooler is ₹1600. If it is increased by 15%, the new price is

$$\frac{100+15}{100} \times 1600 = 1840$$

Ans: (C) ₹1840

12. If A is 50% more than B , then B is less than A by

$$\left(\frac{50}{150} \times 100\right)\% = 33\frac{1}{3}\%$$

Ans: (D) $33\frac{1}{3}\%$

13. The population of a town is 40000 and it increases at 5% per annum. Its population after 2 years will be

$$40000 \left(1 + \frac{5}{100}\right)^2 = 40000 \times \frac{21}{20} \times \frac{21}{20} = 44100$$

Ans: (B) 44,100

14. By selling 24 pens, a vendor loses the selling price of 4 pens. His loss percent is

$$\text{Let S.P of 1 pen} = ₹1. \text{ S.P of 24 pens} = 24, \text{ Loss} = 4$$

$$\text{C.P} = 24 + 4 = 28, \text{ Loss \%} = \frac{4}{28} \times 100 = 14\frac{2}{7}\%$$

Ans: (D) $14\frac{2}{7}\%$

15. The marked price of a saree is ₹1800 and the discount is 15%. The selling price is

$$\text{S.P} = \frac{100-15}{100} \times 1800 = 1530$$

Ans: (C) ₹1530

16. Two radios are sold at ₹960 each, one at 20% profit and the other at 20% loss. On the whole there is a

$$\text{Same S.P, } a\% \text{ profit and } a\% \text{ loss: always a loss of } \left(\frac{a}{10}\right)^2 \%$$

$$\left(\frac{20}{10}\right)^2 = 4\%$$

Ans: (A) loss of 4%

17. If the cost price of 25 articles equals the selling price of 20 articles, then there is a

$$25x = 20y \Rightarrow \frac{y}{x} = \frac{5}{4}$$

$$\left(\frac{y}{x} - 1\right) \times 100 = 25\% \text{ (a gain)}$$

Ans: (B) 25% gain

18. The average of five consecutive odd numbers is 47. The largest of them is

$$\text{Let them be } x, x+2, x+4, x+6, x+8: \frac{5x+20}{5} = 47 \Rightarrow x+4 = 47 \Rightarrow x = 43$$

$$\text{Largest} = 43 + 8 = 51$$

Ans: (B) 51

19. The average of 15 numbers is 32. If each number is increased by 6, the new average is

If each x_i becomes $x_i + b$, the average becomes $\bar{x} + b$.

$$32 + 6 = 38$$

Ans: (A) 38

20. 90 km/h in m/s is

$$90 \times \frac{5}{18} = 25 \text{ m/s}$$

Ans: (C) 25

21. A man goes to a place at 40 km/h and returns by the same route at 60 km/h. His average speed for the whole journey is

$$\frac{2 \times 40 \times 60}{40+60} = \frac{4800}{100} = 48 \text{ km/h}$$

(Not the simple average of the two speeds.)

Ans: (A) 48 km/h

22. The speeds of two cyclists are 30 km/h and 50 km/h. The ratio of the times they take to cover the same distance is

$$T_1 : T_2 = s_2 : s_1 = 50 : 30 = 5 : 3$$

Ans: (C) 5 : 3

23. A 250 m long train crosses a signal post in 10 seconds. Its speed is

$$S = \frac{250}{10} = 25 \text{ m/s} = 25 \times \frac{18}{5} = 90 \text{ km/h}$$

Ans: (B) 90 km/h

24. The simple interest on ₹3500 at 6% per annum for 4 years is

$$\text{S.I} = \frac{3500 \times 4 \times 6}{100} = 840$$

Ans: (D) ₹840

25. The amount on ₹10000 at 10% per annum for 2 years, compounded annually, is

$$A = 10000 \left(\frac{11}{10} \right)^2 = 12100$$

Ans: (C) ₹12,100
