

Arithmetic (Level 1)

MCQ Test, Set 06

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.

- In the ratio $13 : 20$, the consequent (second term) is
A. 20 **B.** 33 **C.** $\frac{13}{20}$ **D.** 13
- ₹3900 is divided among three persons in the ratio $2 : 4 : 7$. The first share is
A. ₹300 **B.** ₹600 **C.** ₹1200 **D.** ₹2100
- If $2\frac{1}{4} : 1\frac{2}{3} : 2\frac{1}{2}$ is $A : B : C$, then
A. $A > B > C$ **B.** $A > C > B$ **C.** $C > A > B$ **D.** $B > A > C$
- If $7 : x :: 28 : 36$, then $x =$
A. 144 **B.** 9 **C.** $5\frac{4}{9}$ **D.** 252
- The third proportional to 8 and 20 is
A. 3.2 **B.** $4\sqrt{10}$ **C.** 160 **D.** 50
- If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = \frac{3}{4}$, then $\frac{a+2c+5e}{b+2d+5f} =$
A. $\frac{3}{4}$ **B.** $\frac{3}{32}$ **C.** $\frac{4}{3}$ **D.** 6
- If 7 chairs cost ₹5810, then 4 such chairs cost (in ₹)
A. 4150 **B.** 830 **C.** 3320 **D.** 10167.5
- In a fort there is food for 800 men for 30 days. Some men left and the food lasted for 40 days. The number of men who left is
A. 600 **B.** 200 **C.** 100 **D.** 300
- $1\frac{1}{4}$ expressed as a percentage is
A. 125% **B.** 1.25% **C.** 25% **D.** 12.5%
- 8% of 650 is
A. 5.2 **B.** 520 **C.** 52 **D.** 81.25
- The price of a fan falls from ₹750 to ₹600. The percentage decrease is
A. 15% **B.** 25% **C.** 80% **D.** 20%

12. If A is 40% less than B , then B is more than A by
A. 40% **B.** $66\frac{2}{3}\%$ **C.** 60% **D.** $28\frac{4}{7}\%$
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13. A town has 5000 people. If the population grows at 8% per annum, after 2 years it will be
A. 6000 **B.** 5400 **C.** 5800 **D.** 5832
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14. By selling 36 bags, a vendor loses the selling price of 9 bags. His loss percent is
A. 25% **B.** $33\frac{1}{3}\%$ **C.** 9% **D.** 20%
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15. A man got a 30% concession on the label price of a watch. He sold it for ₹6300 at a 20% profit on his price. The label price was
A. ₹9000 **B.** ₹7500 **C.** ₹8190 **D.** ₹5250
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16. A trader claims to sell milk at cost price but gives only 750 ml for every litre. His gain percent is
A. $33\frac{1}{3}\%$ **B.** $133\frac{1}{3}\%$ **C.** 75% **D.** 25%
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17. A shopkeeper buys lemons at 7 for ₹10 and sells them at 5 for ₹8. His profit percent is
A. -12% **B.** 25% **C.** 12% **D.** $10\frac{5}{7}\%$
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18. In the first 20 overs of a 50-over cricket match, the run rate was 4.5. The run rate needed in the remaining 30 overs to reach a target of 300 runs is
A. 4.2 **B.** 7 **C.** 10 **D.** 6
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19. The average weight of 12 men increases by 2 kg when a new man replaces one weighing 64 kg. The weight of the new man (in kg) is
A. 88 **B.** 40 **C.** 90 **D.** 66
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20. A bus travelling at 40 km/h covers one-fifth of the distance between two towns in 2 hours. The distance between the towns (in km) is
A. 200 **B.** 80 **C.** 400 **D.** 16
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21. If a car travels from A to B at a km/h and from B to A at b km/h, its average speed is
A. $\frac{a+b}{2}$ **B.** $\frac{ab}{a+b}$ **C.** $\frac{2(a+b)}{ab}$ **D.** $\frac{2ab}{a+b}$
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22. A bus takes $\frac{3}{4}$ of the time a car takes for the same journey. If the car's speed is 60 km/h, the bus's speed is
A. 75 km/h **B.** 80 km/h **C.** 70 km/h **D.** 45 km/h
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23. A train 225 m long running at 54 km/h passes a telegraph pole in
A. 15 seconds **B.** $4\frac{1}{6}$ seconds
C. 30 seconds **D.** 54 seconds
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24. The simple interest on ₹1200 at 9% per annum for 8 months is
A. ₹108 **B.** ₹96 **C.** ₹864 **D.** ₹72
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- 25.** The bacteria count in a sample is 20000. It increases by 10% in the first hour, decreases by 20% in the second and increases by 10% in the third. The count after 3 hours is
- A.** 18,000 **B.** 29,040 **C.** 19,360 **D.** 20,000
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Key sheet

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

Solutions

1. In the ratio 13 : 20, the consequent (second term) is

In $a : b$, a is the antecedent and b is the consequent.

So the consequent of 13 : 20 is 20.

Ans: (A) 20

2. ₹3900 is divided among three persons in the ratio 2 : 4 : 7. The first share is

Sum of the terms = $2 + 4 + 7 = 13$

First share = $\frac{2}{13} \times 3900 = 600$

Ans: (B) ₹600

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

$$A : B : C = \frac{9}{4} : \frac{5}{3} : \frac{5}{2}$$

L.C.M of the denominators = 12

$$= \frac{27}{12} : \frac{20}{12} : \frac{30}{12} = 27 : 20 : 30$$

$$\therefore C > A > B$$

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

4. If $7 : x :: 28 : 36$, then $x =$

Product of means = product of extremes.

$$28x = 7 \times 36 \Rightarrow x = 9$$

Ans: (B) 9

5. The third proportional to 8 and 20 is

$$8 : 20 :: 20 : c \Rightarrow 8c = 20 \times 20$$

$$c = \frac{400}{8} = 50$$

Ans: (D) 50

6. If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = \frac{3}{4}$, then $\frac{a+2c+5e}{b+2d+5f} =$

If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$ then each equals $\frac{ap+cq+er}{bp+dq+fr}$.

Here $p = 1$, $q = 2$, $r = 5$, so the value is $\frac{3}{4}$.

Ans: (A) $\frac{3}{4}$

7. If 7 chairs cost ₹5810, then 4 such chairs cost (in ₹)

Direct proportion: $x_1y_2 = x_2y_1$

$$y = \frac{4 \times 5810}{7} = 3320$$

Ans: (C) 3320

8. In a fort there is food for 800 men for 30 days. Some men left and the food lasted for 40 days. The number of men who left is

$$800 \times 30 = (800 - x) \times 40$$

$$800 - x = 600 \Rightarrow x = 200$$

Ans: (B) 200

9. $1\frac{1}{4}$ expressed as a percentage is

$$1\frac{1}{4} = \frac{5}{4} = \left(\frac{5}{4} \times 100\right)\% = 125\%$$

Ans: (A) 125%

10. 8% of 650 is

$$\frac{8}{100} \times 650 = 52$$

Ans: (C) 52

11. The price of a fan falls from ₹750 to ₹600. The percentage decrease is

$$\text{Change} = 150$$

$$\left(\frac{150}{750} \times 100\right)\% = 20\%$$

Always divide by the original value.

Ans: (D) 20%

12. If A is 40% less than B , then B is more than A by

$$\left(\frac{40}{100-40} \times 100\right)\% = \left(\frac{40}{60} \times 100\right)\% = 66\frac{2}{3}\%$$

Ans: (B) $66\frac{2}{3}\%$

13. A town has 5000 people. If the population grows at 8% per annum, after 2 years it will be

$$5000 \left(\frac{27}{25}\right)^2 = 5832$$

Ans: (D) 5832

14. By selling 36 bags, a vendor loses the selling price of 9 bags. His loss percent is

$$\text{S.P of 36 bags} = 36 \text{ (taking ₹1 each), Loss} = 9, \text{C.P} = 45$$

$$\text{Loss \%} = \frac{9}{45} \times 100 = 20\%$$

Ans: (D) 20%

15. A man got a 30% concession on the label price of a watch. He sold it for ₹6300 at a 20% profit on his price. The label price was

$$\text{C.P} = \frac{70}{100}x; \text{S.P} = \frac{120}{100} \times \frac{70}{100}x = 6300$$

$$x = \frac{6300 \times 10000}{120 \times 70} = 7500$$

Ans: (B) ₹7500

16. A trader claims to sell milk at cost price but gives only 750 ml for every litre. His gain percent is

$$\text{Gain \%} = \frac{\text{Error}}{\text{True value} - \text{Error}} \times 100$$

$$= \frac{250}{750} \times 100 = 33\frac{1}{3}\%$$

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

17. A shopkeeper buys lemons at 7 for ₹10 and sells them at 5 for ₹8. His profit percent is

$$\begin{aligned}\text{C.P of one} &= \frac{10}{7}, \quad \text{S.P of one} = \frac{8}{5} \\ \text{Profit \%} &= \frac{\frac{8}{5} - \frac{10}{7}}{\frac{10}{7}} \times 100 = 12\%\end{aligned}$$

Ans: (C) 12%

18. In the first 20 overs of a 50-over cricket match, the run rate was 4.5. The run rate needed in the remaining 30 overs to reach a target of 300 runs is

$$\begin{aligned}\text{Runs in 20 overs} &= 4.5 \times 20 = 90; \text{ needed} = 300 - 90 = 210 \\ \text{Run rate} &= \frac{210}{30} = 7\end{aligned}$$

Ans: (B) 7

19. The average weight of 12 men increases by 2 kg when a new man replaces one weighing 64 kg. The weight of the new man (in kg) is

$$N = 64 + 12 \times 2 = 64 + 24 = 88 \text{ kg}$$

Ans: (A) 88

20. A bus travelling at 40 km/h covers one-fifth of the distance between two towns in 2 hours. The distance between the towns (in km) is

$$\begin{aligned}\text{In 2 h it covers } 40 \times 2 &= 80 \text{ km} = \frac{x}{5} \\ x &= 80 \times 5 = 400 \text{ km}\end{aligned}$$

Ans: (C) 400

21. If a car travels from A to B at a km/h and from B to A at b km/h, its average speed is

$$\frac{d+d}{\frac{d}{a} + \frac{d}{b}} = \frac{2}{\frac{1}{a} + \frac{1}{b}} = \frac{2ab}{a+b}$$

Ans: (D) $\frac{2ab}{a+b}$

22. A bus takes $\frac{3}{4}$ of the time a car takes for the same journey. If the car's speed is 60 km/h, the bus's speed is

$$\begin{aligned}s_{bus} : s_{car} &= T_{car} : T_{bus} = 4 : 3 \\ \text{Bus speed} &= 60 \times \frac{4}{3} = 80 \text{ km/h}\end{aligned}$$

Ans: (B) 80 km/h

23. A train 225 m long running at 54 km/h passes a telegraph pole in

$$\begin{aligned}\text{Speed} &= 54 \times \frac{5}{18} = 15 \text{ m/s} \\ T &= \frac{225}{15} = 15 \text{ s}\end{aligned}$$

Ans: (A) 15 seconds

24. The simple interest on ₹1200 at 9% per annum for 8 months is

$$\begin{aligned}T &= \frac{8}{12} = \frac{2}{3} \text{ year} \\ \text{S.I} &= \frac{1200 \times 2 \times 9}{3 \times 100} = 72\end{aligned}$$

Ans: (D) ₹72

25. The bacteria count in a sample is 20000. It increases by 10% in the first hour, decreases by 20% in the second and increases by 10% in the third. The count after 3 hours is

$$20000 \times \frac{110}{100} \times \frac{80}{100} \times \frac{110}{100} = 19360$$

Ans: (C) 19,360
