Numerical Ability

Direction (1 – 3) : What should come in place of the question mark '?' in the following questions?

1.
35% of 420 ÷ 3 = 127 – ?
A. 81
B. 41
C. 72
D. 78
E. 97

2.(1093 + 5639 – 2819) ÷ 43 = ?
A. 83
B. 96
C. 91
D. 52
E. 124

3. $\frac{2}{3}$ of $\frac{5}{9}$ of 75% of 2700 = ?
A. 625
B. 750
C. 825
D. 1075
E. 420

Direction: What should come in place of the question mark '?' in the following questions?

4. $?^2 \div (168 \times 4 \div 28) = 6$
A. 12
B. 4
C. 16
D. 8
E. 11

5. $\sqrt{25\% \text{ of } 676} \times 15 = ? \div 2$
A. 390
B. 260
C. 280
D. 370
E. None of these

6.Marked price of a chair is 140% more than the cost price. If after 50% discount, the selling price is Rs. 1800, find the cost price of the chair.
A. Rs. 1200
B. Rs. 1500
C. Rs. 1720
D. Rs. 2100
E. Rs. 1600

7.Speed of a boat in still water is 37 km/h. Speed of the boat in downstream is 18 km/h more than its speed in upstream. What is the downstream speed of boat?
A. 46 km/h
B. 48 km/h
C. 54 km/h
D. 56 km/h
E. None of these

8.14 years hence ratio of ages of A and B will be 4 : 9. If 4 years ago, the ratio of ages of A and B was 2 : 9, find the present age of B.
A. 56 year
B. 63 year
C. 49 year
D. 42 year
E. None of these

9.The Ratio of the efficiency of Jyoti, Dimple & Mohini is 7 : 5 : 8. Together they can complete a work in 11 days. In how many days Dimple can complete the 40% of the same work?
A. $17\frac{3}{5}$ days
B. $19\frac{2}{3}$ days
C. $16\frac{1}{2}$ days
D. $23\frac{3}{4}$ days
E. None of these

10.A started a business with Rs. 33000. After 4 Month, B joined with Rs. 66000 and A doubled his investment. The total annual profit was Rs. 27900. Find the Share of B .
A. Rs. 12400
B. Rs. 14200
C. Rs. 10250
D. Rs. 10850
E. None of these

Direction (11 – 13) : What should come in place of the question mark (?) in the following number series?

11.
24, 26, 41, 84, 212, 638, ?
A. 2235

B. 2350
C. 2430
D. 1865
E. 2045

12.37, 36, 44, 35, 99, 74, ?
A. 231
B. 338
C. 234
D. 290
E. 349

13.13, 12, 20, 51, 188, 915, ?
A. 5535
B. 4510
C. 5454
D. 4580
E. 6556

Direction: What should come in place of the question mark (?) in the following number series?
14. 80, 88, 104, 110, 112, 116, ?
A. 105
B. 115
C. 130
D. 124
E. 150

Direction: What should come in place of the question mark (?) in the following number series?
15. 4, 5, 1, 28, 12, ?, 101
A. 62
B. 78
C. 137
D. 168
E. 105

16.Sum of the length of a rectangle and side of a square is 92 m. The perimeter of rectangle is 174 m and breadth of rectangle is 38 m. Find the side of the square.
A. 38 m
B. 43 m
C. 34 m
D. 48 m
E. None of these

17.Train A with speed 54 km/h crosses train B in opposite direction in 15 secs. Sum of the length of train A and train B is 420 m. What is the speed of train B?
A. 10 m/s
B. 13 m/s
C. 17 m/s
D. 16 m/s
E. 21 m/s

18.Akash invested a certain sum in a scheme offering simple interest for 5 years at the interest rate of 8%. Rohit invested three times the sum invested by Akash in the same scheme for 2 years. If the difference between the amounts of Rohit and Akash after respective periods is Rs. 1648, what was the sum invested by Rohit?
A. Rs. 56400
B. Rs. 64100
C. Rs. 76200
D. Rs. 72600
E. Rs. 61800

19.Manoj bought an article for Rs. 9600 and marked 150% above the cost price and sold it after giving two successive discounts of 30% and 25% respectively. Find the profit obtained by the Manoj.
A. Rs. 3800
B. Rs. 2600
C. Rs. 3200
D. Rs. 4400
E. None of these

20.Abhishek sold an article at a profit of 18%. Had he sold the same article at a profit of 22%, he would have earned Rs. 294 more, find the cost price of article.
A. Rs 6480
B. Rs 5620
C. Rs 8440
D. Rs 7350
E. None of these

Direction (21 – 25) : Study the given table carefully and answer the following questions.
The following table shows the number of persons selected in government jobs in two different states of India in five different years and ratio of number of males to females among them (ratio is same for both the states).

Year	Punjab	Rajasthan	Ratio of male to female
2012	6180	5000	4 : 1
2013	8160	6560	3 : 1
2014	9840	8000	7 : 3
2015	12160	10240	5 : 3
2016	12960	12600	2 : 1

21.
What is the average number of persons selected in Punjab in all years?
A. 1030
B. 9860
C. 9320
D. 8708
E. 8530

22.What is the average number of females who were selected in Rajasthan from 2012 to 2014?
A. 1740
B. 1520
C. 1680
D. 1870
E. None of these

23.Total number of females from Rajasthan who were selected in year 2014 is approximately what percent of the number of males from Punjab who were selected in the same year?
A. 35%
B. 25%
C. 30%
D. 41%
E. 27%

24.What is the total number of males selected from both states in year 2013?
A. 10630
B. 12240
C. 12890
D. 11040
E. 12630

25.What is the difference between number of males selected from Punjab in 2016 and number of females from Rajasthan in 2015?
A. 4407
B. 4800
C. 5300
D. 4360
E. 5039

26.In a farm 20% animals are cows, 26% are dogs, 32% are goats and rest are of buffaloes. If the number of goats in the farm is 288, then find the number of other animals in farm.
A. 184
B. 198
C. 147
D. 254
E. 228

27.The ratio of mustard oil and coconut oil in a vessel is 9 : 7 . If 16 liter of each type of oil is added in vessel then the ratio of coconut oil to mustard oil becomes 9 : 11 . Find the initial quantity of coconut oil in the vessel.
A. 63 liters
B. 49 liters
C. 56 liters
D. 70 liters
E. 35 liters

28.A rice wholesaler sold two-third of his stock at a profit of 15% and remaining at loss of 2%. If there is a profit of Rs. 17640 on overall transaction, what is the cost price of the total stock.
A. Rs. 194000
B. Rs. 170500
C. Rs. 165000
D. Rs. 189000
E. Rs. 220700

29.In a class of 45 students, the average weight of entire class is 54 kg. If 15 new students joined the class then the average weight of class increases by 2 kg. What is the total weight of 15 new students?
A. 840 kg
B. 980 kg
C. 1050 kg
D. 860 kg
E. 930 kg

30.Lalit covered total 200 km by his car. He covered first 60 km of the distance at the speed of 20 km/h then covered 90 km at 60 km/h and the remaining of the

distance at 100 km/h. What will be his average speed?
A. 32 km/h
B. 40 km/h
C. 48 km/h
D. 45 km/h
E. 50 km/h

###ANSWERS###

1. Ans. D.
35% of 420 ÷ 3 = 127 – ?
$\Rightarrow \frac{35}{100} \times \frac{420}{3}$ = 127 – ?
$\Rightarrow \frac{7}{20} \times 140$ = 127 – ?
⇒ ? = 127 – 49 = 78
2. Ans. C.
? = (1093 + 5639 – 2819) ÷ 43
= 3913 ÷ 43
= 91
3. Ans. B.
$\frac{2}{3}$ of $\frac{5}{9}$ of 75% of 2700 = ?
$\Rightarrow ? = \frac{2}{3} \times \frac{5}{9} \times \frac{3}{4} \times 2700$
= 750
4. Ans. A.
$?^2 \div (168 \times 4 \div 28) = 6$
$\Rightarrow \frac{?^2}{168 \times \frac{4}{28}} = 6$
$\Rightarrow \frac{?^2}{24} = 6$
$\Rightarrow ?^2 = 24 \times 6 = 144$
⇒ ? = 12
5. Ans. A.
$\sqrt{25\% \text{ of } 676} \times 15 = ? \div 2$
$\Rightarrow ? = \sqrt{\frac{1}{4} \times 676} \times 15 \times 2$
$= \sqrt{169} \times 15 \times 2$
$= 13 \times 15 \times 2$
= 390
6. Ans. B.
Let the cost price be Rs. 100x, then
Marked price = 100x + 140% of 100x = 100x + 140x = Rs. 240x
Selling price = Marked price – discount = 240x – 50% of 240x
= 240x – 120x = 120x
According to question,
120x = Rs. 1800
⇒ x = 15
Hence, the cost price = Rs. 100x = 100 × 15 = Rs. 1500
7. Ans. A.
Let the speed of river be x km/h.
According to question,
(37 + x) – (37 – x) = 18
⇒ 2x = 18
⇒ x = 9
Downstream speed of boat = 37 + 9 = 46 km/h
8. Ans. C.
Let the age of A and B 14 years hence will be 4x years and 9x years respectively.
4 years ago, age of A = (4x – 18) years
4 years ago, age of B = (9x – 18) years
According to question,
$\frac{4x - 18}{9x - 18} = \frac{2}{9}$
⇒ 36x – 162 = 18x – 36
⇒ 18x = 126
⇒ x = 7
Present age of B = 9x – 14 = 9 × 7 – 14 = 49 years
9. Ans. A.
Let the number of units of work done by Jyoti, Dimple & Mohini on each day be 7, 5 and 8 respectively.
Thus, total work = (7 + 5 + 8) × 11 = 220 units
Work to be done by Dimple = 0.40×220 = 88 units
Required time = $\frac{88}{5} = 17\frac{3}{5}$ days
10. Ans. A.
Ratio of profits of A and B = (33000 × 4 + 66000 × 8) : 66000 × 8
= 5 : 4
Share of B = $\frac{4}{5+4} \times 27900$ = Rs. 12400
11. Ans. A.
The pattern of the series is:
24 × 1 + 2 = 26
26 × 1.5 + 2 = 41
41 × 2.0 + 2 = 84
84 × 2.5 + 2 = 212
212 × 3 + 2 = 638
638 × 3.5 + 2 = 2235
Thus, the missing number is 2235.
12. Ans. D.
The pattern of the series is:
$37 - 1^2 = 36$
$36 + 2^3 = 44$
$44 - 3^2 = 35$
$35 + 4^3 = 99$
$99 - 5^2 = 74$
$74 + 6^3 = 290$

Thus, the missing number is 290.
13. Ans. C.
The pattern of the series is:
$13 \times 1 - 1^2 = 12$
$12 \times 2 - 2^2 = 20$
$20 \times 3 - 3^2 = 51$
$51 \times 4 - 4^2 = 188$
$188 \times 5 - 5^2 = 915$
$915 \times 6 - 6^2 = 5454$
Thus, the missing number is 5454.
14. Ans. D.
Pattern of the series is:
80 + 8 + 0 = 88
88 + 8 + 8 = 104
104 + 1 + 0 + 5 = 110
110 + 1 + 1 + 0 = 112
112+ 1 + 1 + 2 = 116
116+ 1 + 1 + 6 = 124
Thus, the missing number is 124.
15. Ans. C.
The pattern of the series is:
$4 + 1^3 = 5$
$5 - 2^2 = 1$
$1 + 3^3 = 28$
$28 - 4^2 = 12$
$12 + 5^3 = 137$
$137 - 6^2 = 101$
Thus, the missing number is 137.
16. Ans. B.
Let the length of rectangle and side of square be x and s respectively.
According to question,
2(x + 38) = 174
⇒ x + 38 = 87 ⇒ x = 49 m
Also, 49 + s = 92
⇒ s = 43 m
17. Ans. B.
Speed of train A = $54 \times \frac{5}{18}$ = 15 m/s
Let the speed of train B be x m/s.
According to question,
$\frac{420}{15 + x} = 15$
⇒ 225 + 15x = 420
⇒ 15x = 195 ⇒ x = 13
18. Ans. E.
Let the sum invested by Akash be Rs. x.
Then the sum invested by Rohit = Rs. 3x
According to question,
$2 \times \frac{8}{100} \times 3x - 5 \times \frac{8}{100} \times x = 1648$
$\Rightarrow \frac{8}{100} \times x = 1648$
⇒ x = 20600
Sum invested by Rohit = 3x = 3 × 20600 = Rs. 61800
19. Ans. E.
Selling price of the article = 0.70 × 0.75 × 2.50 × 9600 = Rs. 12600
Required profit = 12600 – 9600 = Rs. 3000
20. Ans. D.
Let the cost price of the article be Rs. 'x'.
ATQ,
1.22x – 1.18x = 294
⇒ 0.04x = 294
⇒ x = 7350
21. Ans. B.
Required average = $\frac{6180 + 8160 + 9840 + 12160 + 12960}{5}$ = $\frac{49300}{5}$ = 9860
22. Ans. C.
Required average
$= \frac{1}{3}\left(\frac{1}{5} \times 5000 + \frac{1}{4} \times 6560 + \frac{3}{10} \times 8000\right)$
$= \frac{1}{3}(1000 + 1640 + 2400)$
$= \frac{1}{3}(5040)$
= 1680
23. Ans. A.
Number of females in Rajasthan who were selected in 2014 = $\frac{3}{10} \times 80000$
= 2400
Number of males in Punjab who were selected in 2014 $= \frac{7}{10} \times 9840$
= 6888
\ Required percentage = $\frac{2400}{6888} \times 100$
≈ 35%
24. Ans. D.
Required total = $\frac{3}{4} \times 8160 + \frac{3}{4} \times 6560$
= 6120 + 4920
= 11040
25. Ans. B.
Total number of males selected in Punjab in 2012 = $\frac{2}{3} \times 12960$

= 8640
Total number of females in Rajasthan who were selected in 2015
$= \frac{3}{8} \times 10240$ = 3840
\ Required difference = 8640 – 3840
= 4800
26. Ans. B.
Let total number of animals in the farm be 100x.
So, number of goats = 0.32 × 100x = 32x
According to question,
32x = 288
⇒ x = 9
Number of other animals = 100x – (20x + 26x + 32x) = 22x
= 22 × 9 = 198
27. Ans. C.
Let the initial quantity of mustard oil and coconut oil be 9x liters and 7x liters respectively.
According to question,
$\frac{9x+16}{7x+16} = \frac{11}{9}$
⇒ 81x + 144 = 77x + 176
⇒ 4x = 32
⇒ x = 8
Initial quantity of coconut oil in the vessel = 8 × 7 = 56 litres
28. Ans. D.
Let the CP of total stock be 300x.
SP of two third of stock = $\frac{2}{3} \times \frac{115}{100} \times 300x$ = 230x
SP of the remaining one third of stock = $\frac{1}{3} \times \frac{98}{100} \times 300x$ = 98x
Total SP = 230x + 98x = 328x
Net profit = 328x – 300x = 28x
Now, 28x = 17640 Ã x = 630
CP of total stock = 300 × 630 = Rs. 189000
29. Ans. E.
Sum of weight of 45 students = 54 Â 45 = 2430 kg
Sum of weight of 60 students = 60 Â 56 = 3360 kg
Sum of weight of 15 new students = 3360 – 2430 = 930 kg
30. Ans. B.
$\text{Average speed} = \frac{\text{Total distance covered}}{\text{Total time}}$
$\text{Total time} = \frac{60}{20} + \frac{90}{60} + \frac{50}{100}$ = 3 + 1.5 + 0.5 = 5 hours
$\text{Average speed} = \frac{200}{5}$ = 40 km/h