

QUANT TEST PAPER 4

- The distance between the points (3, -4) and (3, 3) is
 7 Units 5 Units 6 Units 8 Units
- The coordinates of a point which divide the join of A (5, 5) and (8, 5) in the ratio 2 : 1 are
 (5, 6) (7, 5) (8,4) (9, 6)
- XYZ is an equilateral triangle with vertices X (6, -2), Y (2, - 1) and Z (4, -2). If ZA is one of its medians find the length of the median.
 sqrt6 Units sqrt5 Units sqrt13 Units sqrt10 Units
- The ratio in which the line segment joining P (3. -4) and Q(6, 7) is divided by x axis is
 5 : 2 3 : 4 2 : 3 4 : 7
- P (- 4, b) and Q (2, b + 2) are 2 points and the co-ordinates of the middle point of PQ are (- 2, 2) . The value of b is
 1 3 -2 -1
- The slope of the line Joining A (-4. 6) and B (5, 3) is
 2/5 -1/3 2/3 1/3
- The points of intersection of the circle $x^2 + y^2 = 34$ and line $y = 5$
 (2, 4) (-2, 4) (3, 6) (-3, 6) (3, 5) (3, -5) (2, 3) (-2, 3)
- Complete the series 25, 125, 36, 216, 49, ____
 200 290 335 343
- The value of a machine depreciates at the rate @ 15% per annum. If the price of a new machine is Rs. 60,000 its value after 2 years will be
 Rs. 43350 Rs.45000 Rs. 52570 Rs. 51750
- 80% of p = 40% of Q and Q = X % P . Then the value of x is
 360 200 300 250
- The population of a town increase by 10% every year. If it is 16093 now, its population 2 year ago was
 13300 14200 14750 15265
- If A:B is 2:3 and B:C is 3:4 then A:C is equal to
 2:3 6:7 5:6 1:2
- If the numerator of a fraction is increased by 15 % and the denominator is increased by 10% , then the value of the fraction is 15/26, The original fraction is
 130/223 158/229 133/462 165/299
- X varies directly as Y varies and Z varies inversely as Y varies . At a time Y = 10, X = 20 , Z = 5 , If y is changed to 20 then the values of Z is :
 2.5 5 10 3
- If a Box containing 10 mirrors is dropped which of the following can not be the ratio of broken mirrors to unbroken mirrors.

1 : 1 2 : 3 3 : 2 3 : 4

16. 5 (P 's Capital) = 10 (Q's Capital) = 15 (R's Capital) then the ratio of their capital is :

6 : 3 : 2 2 : 7 : 9 8 : 5 : 3 2 : 3 : 1

17. The difference between a discount of 50 % on Rs. 500 and two successive discounts of 45 % and 5% on the same amount is

Rs 15 Rs 11.25 Rs 10 None of These

18. A man rows upstream 10 Km. And downstream 20 Km taking 4 hrs each time. The velocity of the current is

2 Kmph 2.5 Kmph 1.25 Kmph 1. 5 Kmph

19. A boat goes 50 Km upstream in 10 hours and a distance of 40 Km. Down stream is 9 hours. The speed of the boat in standing water is

4.9 Kmph 5.2 Kmph 4.5 Kmph 4.72 Kmph

20. A man can swim 4 Kmph in still water . If the velocity of the stream be 3 kmph the time taken by him to swim to a place 14 Km upstream and back is:

16 Hours 12 Hours 14 Hours 10 Hours

21. D xyz is rotated about x y as axis. Find the volume of the solid generated if $xy = 6$ cm and $yz = 10$ cm. D x y z is a right angled D

200 P 300 P 250 P 60 P

22. I shopped in 4 shops 1 after another. In the end I had no money. In each shop I Spent Rs 2 more than 20% of what I had when I entered each shop. How much did I have in the beginning .

87.81 82.35 80.30 85.65

23. A rides 5 km at 1 kmph, 4 km at 2 kmph and 12 km at 6 kmph. What is his Average speed .

2.33 kmphr. 4.33 kmphr. 3.33 kmphr. 1.33 kmp hr.

24. Within a square ground with one side 20 m , there is a square path that is 4 m in breadth. What is the area of the park without the path.

144 m² 400 m² 16 m² Not determined.

25. If $(p - q) ^ 2 = (x - y) ^ 2$, then $x =$

$p - q + y$ $y - p + q$ Both (a) and (b) None of these

26. Rs. 13400 are invested at SI for 7 years partly at 6 % interest and partly at 4 % interest. If both sums yield equal linterest , find the sum invested at 6 %.

Rs. 5360 Rs. 3000 Rs. 4000 Rs. 2800

27. B reaches 10 ,minutes early travelling at 6 km per hour, whereas A reaches 10 minutes late travelling at 5 km per hour. Find the distance.

10 Km 12 Km 17 Km 20 Km

28. Fi nd the next term in the series 123, 129, 141, 147, _____

171 162 159 148

29. A 2 digit number is divisible by 6 and not by 12. When the digits are interchanged the number is also divisible by 12. The absolute value of the difference between the numbers is

18 12 24 36

30. A Farmer notices that the area of his farm in sq mts is equal to 2 times the square of the number of tractors he owns. If one tractor is stolen he has to sell 62 sq mts of the farm. So as to maintain the relationship. Find the number of tractors remaining.

- 14 15 16 17

31. How many numbers greater than a million can be formed using digits 0,6 ,6, 7 , 0, 0 , 6, and 7 ?

- 410 420 360 800

32. At exactly midnight, a thief tries to steal a car from a garage. 2 full minutes are gone before the guard arrives at the scene and starts running after the burglar. At 12 : 05 :00, the burglar panicks and slips. By the time he gets up, 10 seconds are gone and the guard has caught up with him . Had he not fallen, the thief would have reached a safe hideout which was at a distance of 3560 m from the museum at 12 : 05 : 56 hours. What was the running speed of the security guard ?

- 15.07 m / sec 0.6 km / min 12 m / sec 15 m / sec

33. X and Y enter into a partnership by investing certain capital in the ratio of 1 : 3. However, after 4 months, X alone starts managing the business and Y pays him Rs. 10,000 per month. How much profit should they make so that at the end of the year, when the profit is divided, the net incomes of both are the same for the year ?

- Rs. 40,000 Rs.320,000 Rs 400, 000 Rs . 200, 000

34. Complete the series 1, 3, 4, 13, 53, _____

- 690 670 65 35

35. There are 5 people - A, B, C, D, E, standing in a queue. How many ways are available to form the queue such that D is not ahead of E ?

- 60 120 125 80

36. 5 men can dok a certain task working 10 hours a day in 1 day that requires 4 Women 2 days working 8 hours a day and 5 boys 4 days working 5 hours a day. If a contractor hires 20 men, 9 Women, and 10 boys to complete together 1000 such tasks, starting on 1st March, 2000, when will the entire work get over ?

- 2 nd July 29 th June 30 th June 4 th August

37. X's Salary is 150% of Y's salary. Z's salary is 75 % of Y's salary. The total of all three salaries is Rs. 325,000. How Much is Y's Salary ?

- Rs. 100,000 Rs. 25, 0000 Rs. 24, 000 Rs. 28, 000

38. If santa can walk a certain distance in 200 days when he rests 18 hours each day; how long will it take to walk twice the distance twice as fast and the rest half as long each day ?

- 80 days 40 days 100 days 50 days

39. An automobile has two punctured tyres. The first puncture by itself would make the tyre flat in 10 minutes. The second puncture by itself would make the tyre flat in 5 minutes. How long would it take for both punctures together to make the remaining tyre flat ?

- 2 1/3 minutes 4 minutes 5 minutes 15 minutes

40. $a * b = a - b$, if both 'a ' and ' b ' are positive.
= 1 otherwise

$a @ b = ab$, if ' ab ' is positive.

= 0 otherwise

based on the data given above solve the question given below

$$[4 * (- 5)] @ [(- 2) * 2] / [(- 4) @ (- 5)] * [2 @ 2]$$

- 1/16 1/4 1/8 0

41. The square root of $(11 + 2\sqrt{30})$ is

- $\sqrt{5} + \sqrt{6}$ $\sqrt{5} + \sqrt{3}$ $\sqrt{10} + \sqrt{3}$ $\sqrt{6} + 1$

42. An army chief wishing to draw his 17164 men in the form of a solid square found that he had 3 men more. The number of men in the last row was.

- 152 131 134 140

43. What is the ratio whose terms differ by 50 and the measure of which is $3/5$

- 80 95 60 75

44. A bag contains Rs 300 in the form of 1 rupee, 50 paise and 25 paise coins in the ratio 3 : 2 : 4. The number of 25 paise coins in the bag are

- 240 300 360 180

45. Rs. 11250 are divided among Jay, Ajay & Vijay so that Jay may receive one fourth as much as Ajay and Vijay together receive and Ajay one half of what Jay & Vijay together receive. What is Jay's share.

- Rs 6500 Rs 5250 Rs 2250 Rs 3750

46. X, Y, Z, enter into a partnership. X invests some money at the beginning, Y invests 4 times the amount after 8 months and Z invests 3 times the amount after 10 months. If the annual profit be Rs. 8500 then Z's share is

- 1525 1875 2000 1500

47. By selling 75 toys a shopkeeper gains the selling price of 25 toys. Find his gain percent.

- 20% 25% 50% 75%

48. P & Q enter into a partnership. P invests Rs 8000 for 6 months and Q remains in the business for 3 months. Out of the total profit Q claims $1/2$ of the profit. What was Q's contribution

- Rs 5750 Rs 15525 Rs 8000 Rs 16000

49. Successive discounts of 25% and 15% are equivalent to a single discount of

- 42.75% 40% 36.25% 35%

50. If 4 cars are sold at the cost price of 6 cars the profit % will be

- 50% $33\frac{1}{3}\%$ 16.67% 32%

Explanatory answers for paper IV

1. Required distance = $\sqrt{(3-3)^2 + (3 - (-4))^2}$
 = $\sqrt{7^2}$
 = 7 Units.
 Hence[1]

2. The required point is
 $[\frac{2 * 8 + 1 * 5}{2 + 1}, \frac{2 * 5 + 1 * (-3)}{2 + 1}]$
 = $21/3, 15/3$
 = (7, 5)
 Hence[2]

3. A is the midpoint of yz,
 The coordinates of A are $[\frac{2+4}{2}, \frac{-2+4}{2}, \frac{-2+2}{2}]$
 $= (3, 0)$
 $XA = \sqrt{(6-3)^2 + (-2-0)^2}$
 $= \sqrt{3^2 + 2^2}$
 $= \sqrt{9+4} = \sqrt{13}$ Units
 Hence [3]

4. Let the ratio be K : 1
 $TK + 1 * (-4) / K + 1 = 0$
 $TK = 4$
 $K = 4 / 7$
 The ratio is 4/7 : 1
 $= 4 : 7$
 Hence [4]

5. $b + b + 2 / 2 = 2$
 $2b + 2 = 4$
 $2b = 2$
 $b = 1$
 Hence [1]

6. Slope = $\frac{y_2 - y_1}{x_2 - x_1}$
 $= \frac{3 - 6}{5 + 4} = \frac{-3}{9} = -1/3$
 Hence [2]

7. Putting $y = 5$ in $x^2 + y^2 = 34$
 $= x^2 + 25 = 34$
 $x^2 = 9 \Rightarrow x = \pm 3$
 points are $(3, 5)$ and $(-3, 5)$
 Hence [3]

8. The series is $5^2, 5^3, 6^2$ and so on

9. Value of Machinery after 2 years = $60000 (1 - 15/100)^2$
 $60000 (115/100)^2$
 $= \text{Rs } 43350$
 Hence [1]

10. $80/100 P = 40/100 Q = 40/100 * X/100$
 $8/10 = 4x/1000$
 $X = 8000/40 = 200$
 Hence [2]

11. Population 2 years ago = $16093 / (1 + 10/100)^2$
 $= 16093 * 10000 / 12100$
 $= 13300$
 Hence [1]

12. A:C = $2/3 * 3/4$
 $= 1:2$
 Hence [4]

13. Let the fraction be x/y
 New fraction = 115% of x / 110% of y = $23x / 22y = 15 / 26$

$$x / y = (15/26 * 22 / 23) = 330 / 598 = 165 / 299$$

Hence[4]

14. When $y = 10$, $X = 20$, $Z = 5$

$$x = k, \text{ and } z = k / y \Rightarrow 5 = k / 10$$

$$k = 50$$

$$X = 2y \text{ and } Z = 50 / y$$

When $y = 20$

$$Z = 50 / 20 = 2.5$$

Hence[1]

15. For a perfect division into whole numbers the sum of the terms of the ratio must divide 10

Therefore the ratio cannot be 3 : 4

Hence[4]

16. $SP = 10$, $Q = 15$, $R = x$

$$P = x / 5, Q = x / 10 \text{ and } R = x / 15$$

$$P : Q : R = x / 5 : x / 10 : x / 15$$

$$= 6 : 3 : 2$$

Hence[1]

17. S.P at 50% discount = Rs 250

$$\text{S.P. after 2 successive discounts of } 5\% \text{ and } 5\% = 95\% \text{ of } (55\% \text{ of } 500) =$$

$$[95 / 100 * 55 / 100 * 500]$$

$$= \text{Rs. } 261.25$$

$$\text{differences} = \text{Rs } 11.25$$

Hence[2]

18. Rate unstream = $10 / 4 = 2.5$ kmph

$$\text{Rate downstream} = 20 / 4 = 5 \text{ kmph}$$

$$\text{velocity of current} = 1 / 2 (5 - 2.5) \text{ kmph}$$

$$= 1.25 \text{ kmph}$$

Hence[2]

19. Rate upstream = $50 / 10 = 5$ kmph

$$\text{Rate downstream} = 40 / 9 = 4.44 \text{ kmph}$$

$$\text{Rate in still water} = 1 / 2 (5 + 4.44)$$

$$= 4.72 \text{ kmph}$$

Hence[4]

20. Rate upstream = 1

$$\text{rate downstream} = 7$$

$$\text{Total time take} = [14 / 1 + 14 / 7]$$

$$= 14 + 2 = 16 \text{ hours}$$

Hence[1]

21. A cone is generated with radius 10 cm & vertical height = 6 cm

$$\text{Volume} = \frac{1}{3} * 100 * 6 = 200 \text{ P}$$

Hence [1]

22. Let him have Rs. X when he entered the Amount spent = $2 + x / 5$

$$x - 2 - x / 5 = 0$$

$$5x - 10 - x = 0$$

$$4x = 10, x = 2.5$$

$$\text{When I entered the } 3^{\text{rd}} \text{ shop, I had } 2.5 (2.5 + 2) = 11.25$$

$$\text{When I entered the } 2^{\text{nd}} \text{ shop I had } 11.25 + 2 (2.5) = 33.125$$

When I entered the 1st shop I had $33.125 + 2(2.5) = 87.8125$
Hence [1]

23. Total time = $5 / 1 + 4 / 2 + 12 / 6$
= 9 hours
Total distance = 21 km
Average speed = $21 / 9 = 2.33$ every hr.
Hence[1]

24. It cannot be determined as it depends on the position of the path. Hence[4]

25. $(p - q)^2 = (x - y)^2$
 $p - q = \pm x - y$
 $p - q = x - y$ or $y - x$
 $x = p - q + y$ or $q - p + y$
Hence [3]

26. Let the sum interested at 6% be x
 $X * 7 * 6 / 100 = 100$
 $= (13400 - x) * 7 * 4 / 100$
 $42x / 10 = 93800 - 7x / 25$
 $42x = 93800 * 4 - 28x$
 $70x = 93800 * 4 / 70 = \text{Rs } 5360$
Hence[1]

27. Let 'd' be the distance and 't' be the normal time
 $D / 6 = t - 10 / 60$
 $D / 5 = t + 10 / 60$
 $D / 6 - d / 5 = -10 / 60 - 10 / 60$
 $5d - 6d / 30 = -20 / 60$
 $-2d = -20$
 $d = 10 \text{ km}$
Hence [1]

28. Each number in the series in the previous numbers added to the sum of its digits.
the last no. = $1 + 4 + 7 + 147$
= 159
Hence [3]

29. Both the digits must be even and odd multiples of 6 will not be divisible by 12
The number is 42
And its reverse is 24
The difference = 18
Hence [1]

30. Let there be x tractors
Area of farm = $2x^2$
When one tractor is stolen $x - 1$ will
Remain $2x^2 - 2(x - 1)^2 = 62$
Solving
 $2x^2 - 2(x^2 - 2x + 1) = 62$
 $2x^2 - 2x^2 + 4x - 2 = 62$
 $4x = 60$
 $x = 15$
No. of tractors = $15 - 1 = 14$
Hence [1]

31. All seven digits with have to be used to make a number greater than a million.
 Since there are 3 6's and 2 7's the number of distinct persutations = $7! / 2! 3!$
 But all persutations starting with zero should let be counted
 $7! / 2! 3! - 5! / 2! 3!$
 $= 410$
 Hence [1]

32. Let the speed of the burglar and the guard be 'x' min /sec and 'y' min / sec
 The guard covered the distance in 3min 10 sec for which the thief took 5 minutes
 Therefore $300 x = 190 Y$
 $30x = 19y$
 Also given that
 $356 * x = 3560 m$
 $x = 10 m / sec$
 and $y = 300 * 10 / 190 = 15.07 m / sec$
 Hence [1]

33. Let profit be Rs p
 Then x gets 0.25 p. and y gets 0.75 p. in the ratio of their investement.
 Y pay Rs. 10, 000 per month for 8 months
 $= 10000 * 8 = Rs 80, 000$
 $= 0.25 p + 80000 = 0.75 p - 80000$
 $0.5 p = 160000$
 $P = 320, 000$
 Hence [2]

34. The series is $3*1+1$, $4*3+1$ and so on

35. For any positions of A B & C there are 2 ways of completing the queue either D will be ahead or behind E since of the total combinations of forming a queue half will have D ahead of E.
 Total No. of ways = $5! = 120$
 But in this case = 60
 Hence[1]

36. One task = 5 men 10 hrs 1 day = 50 - man hours
 same task = 4 women 8 hrs 2 days = 64 - women hours
 same tassk = 5 boys 5 hrs 4 days = 100 - boy hours
 each day total labour available = 20 men = (200 man hours) + 9 women (72 women hours) + 10 boys = 50 boy hours
 $200 * 100 / 50 + 72 * 100 / 64 + 50$
 $= 400 + 150 + 50$
 $= 600 boy hours$

boy hours task days

100	1	1
600	1000	?

$= 1000 * 100 / 600 = 167 days$
 from 1st march 167 days = 14 th August.
 Hence [4]

37. Let y's salary be x
 x's salary = 150 x
 z's salary = $75 x / 100$
 $x + 75 x / 100 + 150x / 100 = 325 x / 100$
 $325x / 100 = 3, 25, 000$

$$x = 325000 * 100 / 325 = 1,00,000.$$

[Hence]

38. Distance Time Speed Days

$$x \cdot 24 - 18 = 6 \text{ hrs } y \cdot 200$$

$$2x \cdot 24 - 9 = 15 \text{ hrs } 2y \text{ ?}$$

$$\text{Days} = 200 * 2x / x * 6 / 15 * y / 2y = 80 \text{ days.}$$

Hence [1]

39. In 1 minute, tyre flat = $1 / 10$ ----- Puncture (I)

In 1 minute, tyre flat = $1 / 5$ ----- puncture (II)

Together $1 / 10 + 1 / 5 = 3 / 10$ in one minute

$$\text{Remaining} = 7 / 10$$

$$= 7 / 10 * 10 / 3 = 7 / 3$$

$$= 2 \frac{1}{3} \text{ minutes}$$

Hence[1]

$$40. (1)(1) / 20 - 4 = 1 / 16$$

Hence [1]

41. Two numbers whose sum is 11 and product of their squares is 30 are $\sqrt{5}$ & $\sqrt{6}$

$$\sqrt{11} + 2\sqrt{30}$$

$$= \sqrt{(\sqrt{5} + \sqrt{6})^2}$$

$$= (\sqrt{5} + \sqrt{6})$$

Hence [1]

$$42. 17164 - 3 = 17161$$

$$\sqrt{17161} = 131$$

No. of men in the last row was 131

Hence [2]

43. Let the term be $x : x + 50$

$$X / x + 50 = 3 / 5$$

$$5x = 3x + 150 = 2x = 150$$

$$x = 75$$

Hence [4]

44. The ratio of coins = $3/1 : 2/2 : 4/4$

$$= 3 : 1 : 1$$

The amount of 25 paise coins is Rs. 60

$$\text{No of coins} = 60 / 0.25$$

$$= 240 \text{ coins}$$

Hence [1]

$$45. J + A + V = 11250$$

$$J = \frac{1}{4} (A + V)$$

$$4J = A + V$$

$$5J = 11250$$

$$J = 11250 / 5 = 2250$$

Hence [3]

46. Let x invest Rs a for 12 months Y invest Rs $4a$ for 4 months Z invest Rs $3a$ for 2 months

The ratio is $12a : 16a : 6a$

$$Z's \text{ share} = \text{Rs } 8500 * 3 / 17 = \text{Rs } 1500$$

Hence [4]

47. S. P of 75 toys = C P of 75 toys

Let CP of each toy = Rs 1
CP of 50 toys = Rs 50
SP of 50 toys = Rs 75
 $= 25 * 100 / 50$
 $= 50\%$
Hence [3]

48. Let Q's contribution = Rs x
 $8000 * 6 : 3x$
 $16000 : x$
ratio of profit $\frac{1}{2} : \frac{1}{2}$
 $= 1 : 1$
 $16000 / x = 1 / 1$
 $= Rs 16000$
Hence [4]

49. Let the marked price be Rs. 100
Final SP after 2 discounts = 15%, 75% of Rs 100
 $= Rs. 63.75$
Single discount $= 100 - 63.75 = 36.25 \%$
Hence [3]

50. Let C.P. of 1 car = x
C.P. of 4 cars = 4x
 $\% \text{ profit} = \frac{2x}{4x} * 100$
 $= 50\%$
Hence [1]