CAT Exam 2024
Quant MCQs Test 4

Q.1. The salaries of Ramesh, Ganesh and Rajesh were in the ratio 6:5:7 in 2010, and in the ratio 3:4:3 in 2015. If Ramesh's salary increased by 25% during 2010-2015, then the percentage increase in Rajesh's salary during this period is closest to

A. 8   B. 7   C. 9   D. 10

Q.2. In an examination, Rama's score was one-twelfth of the sum of the scores of Mohan and Anjali. After a review, the score of each of them increased by 6. The revised scores of Anjali, Mohan, and Rama were in the ratio 11:10:3. Then Anjali's score exceeded Rama's score by

A. 24   B. 26   C. 32   D. 35

Q.3. Anil alone can do a job in 20 days while Sunil alone can do it in 40 days. Anil starts the job, and after 3 days, Sunil joins him. Again, after a few more days, Bimal joins them and they together finish the job. If Bimal has done 10% of the job, then in how many days was the job done?

A. 14   B. 13   C. 15   D. 12

Q.4. A cyclist leaves A at 10 am and reaches B at 11 am. Starting from 10:01 am, every minute a motor cycle leaves A and moves towards B. Forty-five such motor cycles reach B by 11 am. All motor cycles have the same speed. If the cyclist had doubled his speed, how many motor cycles would have reached B by the time the cyclist reached B?

A. 23   B. 20   C. 15   D. 22

Q.5. The average of 30 integers is 5. Among these 30 integers, there are exactly 20 which do not exceed 5. What is the highest possible value of the average of these 20 integers?

A. 3.5   B. 4   C. 4.5   D. 5

Q.6. In a six-digit number, the sixth, that is, the rightmost, digit is the sum of the first three digits, the fifth digit is the sum of first two digits, the third digit is equal to the first digit, the second digit is twice the first digit and the fourth digit is the sum of fifth and sixth digits. Then, the largest possible value of the fourth digit is

A. 4   B. 5   C. 6   D. 7

Q.7. In 2010, a library contained a total of 11500 books in two categories - fiction and nonfiction. In 2015, the library contained a total of 12760 books in these two categories. During this period, there was 10% increase in the fiction category while

there was 12% increase in the non-fiction category. How many fiction books were in the library in 2015?

A. 6000   B. 6160   C. 5500   D. 6600

Q.8. The strength of a salt solution is p% if 100 ml of the solution contains p grams of salt. Each of three vessels A, B, C contains 500 ml of salt solution of strengths 10%, 22%, and 32%, respectively. Now, 100 ml of the solution in vessel A is transferred to vessel B. Then, 100 ml of the solution in vessel B is transferred to vessel C. Finally, 100 ml of the solution in vessel C is transferred to vessel A. The strength, in percentage, of the resulting solution in vessel A is

A. 12   B. 14   C. 13   D. 15

Q.9. A shopkeeper sells two tables, each procured at cost price p, to Amal and Asim at a profit of 20% and at a loss of 20%, respectively. Amal sells his table to Bimal at a profit of 30%, while Asim sells his table to Barun at a loss of 30%. If the amounts paid by Bimal and Barun are x and y, respectively, then (x −y) / p equals

A. 0.7   B. 1   C. 1.2   D. 0.5

Q.10. Mukesh purchased 10 bicycles in 2017, all at the same price. He sold six of these at a profit of 25% and the remaining four at a loss of 25%. If he made a total profit of Rs. 2000, then his purchase price of a bicycle, in Rupees, was

A. 8000   B. 6000   C. 4000   D. 2000

Answer Key

1. (B), 2. (C), 3. (B), 4. (C), 5. (C), 6. (D), 7. (D), 8. (B), 9. (B), 10. (C)

Q1: Explanation

Let their salaries in 2010 be 6x, 5x and 7x respectively.

Also, let their salaries in 2015 be 3y, 4, y and 3y respectively

Given, 3y=1.25×6x

Or y = 2.5x.

Therefore, salary of Rajesh in 2015 = 3y=3×2.5x=7.5x

Percentage increase = (7.5x−7x7x)×100≈7

Q2: Explanation

Let their scores after review be 11x, 10x, and 3x respectively.

Therefore, their scores before review was: (11x-6), 10x-6) and (3x-6) respectively.

Given, Rama's score was one-twelfth of the sum of the scores of Mohan and Anjali.

$\Rightarrow (3x-6) = \frac{1}{12}[(11x-6) + (10x-6)]$

$\Rightarrow 12(3x-6) = 21x - 12$

$\Rightarrow 36x - 72 = 21x - 12$

$\Rightarrow 36x - 21x = 72 - 12 = 60$

$\Rightarrow x = 4$

Now, Anjali's score – Rama's score = $(11x-6) - (3x-6) = 8x = 32$.

Q3: Explanation

Let the work be of 40 units

Amount of work done by Anil in one day = 40/20 = 2 units

Amount of work done by Sunil in one day = 20/20 = 1 units

Bimal does 10% work i.e. 4 units.

Rest 40 - 4 = 36 units is done by Anil and Sunil.

Let Anil took x days. Therefore, Sunil took (x-3) days. Therefore,

$2 \times x + 1 \times (x-3) = 36$

Or x = 13 days.

Q4: Explanation

Time taken by cyclist to cover the distance AB = 60 min

Given, starting from 10:01 am, every minute a motor cycle leaves A and moves towards B. Forty-five such motor cycles reach B by 11 am.

Also, the speed of all the motor cycles is same.

That means that the 45th motor cycle which started at 10:45 am, reached B exactly at 11 am. Rest all reached B some time before B.

Therefore, each motor cycle takes 15 min to cover the distance AB.

Now, if the cyclist doubles his speed, then he will reach B in 30 min i.e. at 10:30 am.

So, the 15th motor cycle (started at 10:15 am from A) would be the last motor cycle to reach point B at 10:30 am.

Hence, there will be 15 motor cycles would have reached B by the time the cyclist reached B.

Q5: Explanation

Let a be the average of 20 numbers whose average does not exceed 5.

Let b be the average of rest of the 10 numbers. Clearly, b>5 i.e. the average of these numbers exceeds 5.

Therefore,

30 × 5 = 20a + 10b

⇒ 2a + b = 15

⇒ b = 15 − 2a

Going by the options, we can say that when a=4.5, b=6 which satisfies all the conditions.

Q6: Explanation

Let the number be ABCDEF, where A, B, C, D, E, and F be the digits.

Given,

C = A

B = 2A

F = A + B + C = A + 2A + A = 4A

E = A + B = A + 2A = 3A

D = E + F = 3A + 4A = 7A.

Since A and D both are digit, the maximum possible value of A = 1. Therefore, the maximum value of D = 7.

Q7: Explanation

Let there number of fiction and non fiction books in 2010 be x and y respectively.

From the first condition:

x+y = 11500···(1)

From the second condition:

1.1×x+1.2×y=11500···(2)

Solving both the equations, we get x = 6000.

In 2015, the number of fiction books = 1.1x = 6600

Q8: Explanation

Initial amount of salt in vessel A = 10 gms per 100 ml, therefore in 500 ml the amount of salt = 50 gms

Initial amount of salt in vessel B = 22 gms per 100 ml, therefore in 500 ml the amount of salt = 110 gms

Initial amount of salt in vessel C = 32 gms per 100 ml, therefore in 500 ml the amount of salt = 160 gms

When 100 ml is trasferred from A to B, the amount of salt now in B = 10 + 110 = 120 gms in 600ml.

The new concentration of salt in B = 120/600 = 20 gms per 100 ml.

Also, the amount of salt lef in A = 50 – 10 = 40 gms in 400ml.

Now, when 100 ml is trasferred from B to C, the amount of salt now in C = 20 + 160 = 180 gms in 600ml.

The new concentration of salt in C = 180/600=30 gms per 100 ml.

Finally, when 100 ml is trasferred from C to A, the amount of salt now in A = 30 + 40 = 70 gms in 500ml.

Therefore, the strength of salt in A = 70500 × 100 = 14

Q9: Explanation

Cost of table for Aman = 1.2p

Cost of table for Asim = 0.8p

Aman sells to Bimal at 1.3 × 1.2p = 1.56p = cost of table for Bimal = x

Asim sells table to Barun at 0.7 × 0.8p = 0.56p = cost of table for Barun = y

Therefore, x – yp = 1.56p – 0.56pp = 1

Q10: Explanation

Let he cost of each bicycle be x.

From the given condition:

10x + 2000 = 6 × 1.25x + 4 × 0.75x

⇒ x = 4000