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Average Questions for SBI PO, IBPS PO and RBI Grade B Exams.

Average Quiz 14

Direction: Read the following questions carefully and choose the right answer.

- The average temperature of Delhi in the first four days of June 2017 was 52 degrees. The average for the second, third, fourth and fifth days was 55 degrees. If the temperatures of the first and fifth days were in the ratio 5 : 7, then what was the temperature of Delhi on 5th June 2017?

A. 36 degrees B. 30 degrees C. 48 degrees D. 42 degrees E. None of these
- The average weekly salary per head of all employees (supervisors and labourers) is Rs. 100. The average weekly salary per head of all the supervisors is Rs. 600 while the average weekly salary per head of all the labourers is Rs. 75. Find the number of supervisors in the factory if there are 840 labourers in it.

A. 46 B. 42 C. 44 D. 48 E. None of these
- The average score (runs/match) of Dravid before the start of World Cup was 35. In the world cup of 6 matches, his total score was 355 runs. Find the total number of matches played by him till date, if his new average after the series is 37.5.

A. 55 B. 56 C. 52 D. 58 E. 60
- City Pretoria is 7800 km directly to the east of city Canberra . A plane takes off from Canberra at 8:00am one day and lands at Pretoria at 3:00 am the next day. Five hours later it takes off from Pretoria and lands at 2:00 pm the same day at Canberra. There is a steady wind blowing at 25 km/hr from east to west. With respect to the wind, the plane cruises at the same uniform speed in either direction, but the speed with respect to the ground is different. What is the time difference between Canberra and Pretoria?

A. 5 hours B. 4 hours C. 3 hours D. 6 hours E. 7 hours
- In a school, there are five friends- A, B, C, D and E. The weight of A is equal to the average weight of B, C and D and the weight of B is equal to the average weight of A, C and D. The average weight of A and C is equal to the average weight of C and D. E is 30 kg heavier than C and the average weight of B and D is 60 kg. What is the average weight (in kgs) of A, B, C, D and E?

A. 52.5 B. 56 C. 58.4 D. 66 E. None of these

6. In a group of four students A, B, C, and D, the average weight of them is 80 kg. If the weight of B were 33.33% less, the average weight would have been 12.5% less. If A's weight were increased by 25% and D's were increased by 40% then the average weight would have been increased by 13.75 kg but if the percentage of increase were swapped i.e. A's weight were increased by 40% and D's weight were increased by 25% then the average weight would have been increased by 12.25 kg. If the original weight of A was 40% less than that of D then what was the original weight of C (in kg)?

- A. 40 B. 42 C. 45 D. 60 E. None of these

7. There are five consecutive even numbers. Each number is multiplied by 2 and then 1, 2, 3, 4 and 5 is added to first, second, third, fourth and fifth number respectively. The new average of the five numbers is 125% more than the original average. What is the difference between the highest and lowest original number?

- A. 12 B. 6 C. 10 D. 8 E. 14

8. S1, S2 and S3 are three arithmetic progression series. S1 is an increasing series with elements A, B, C, D and E. S2 is a decreasing series with elements P, Q, R, S and T. S3 is formed on adding the corresponding elements of S1 and S2 i.e. first element of S3 is sum of first element of S1 and S2, similarly second and so on. In S3, the average of all the terms is 30 and the last term is 12 more than the first term. What is the sum of second term and last term of S3?

- A. 65 B. 63 C. 60 D. 57 E. 68

9. A, B, C and D are four identical buckets of capacity 60 lit each. From bucket B, 6 lit water is transferred to A and 5 lit is transferred to C and from D 16 lit of water is taken out, making the water in D decrease by 40% and in B decrease by 33.33%. The average water quantity in all four buckets now is 30lit. What was the average quantity of water in A and C originally?

- A. 27.5 lit B. 35.5 lit C. 33 lit D. 29.5 lit E. 31.5 lit

10. The average of a group of 15 members initially increases from 60kg to 65 kg when A, B and C join the group. The weight of A, B and C are in the ratio 3 : 4 : 2. What is the difference between weight of A and C?

- A. 40 kg B. 45 kg C. 20 kg D. 15 kg E. 30 kg



CORRECT ANSWERS:

1	2	3	4	5	6	7	8	9	10
D	B	D	D	D	A	D	B	E	E



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Explanations:

1. Sum of temperature on 1st, 2nd, 3rd, and 4th days = $(52 \times 4) = 208$ -----(I)

Sum of temperature on 2nd, 3rd, 4th, and 5th days = $(55 \times 4) = 220$ -----(II)

Subtracting equation (I) from (II)

Temperature on 5th June 2017 – temperature on 1st June 2017 = 12 degrees.

Let the temperature on 1st and 5th June 2017 be $5x$ and $7x$ degrees respectively.

Then, $7x - 5x = 12$

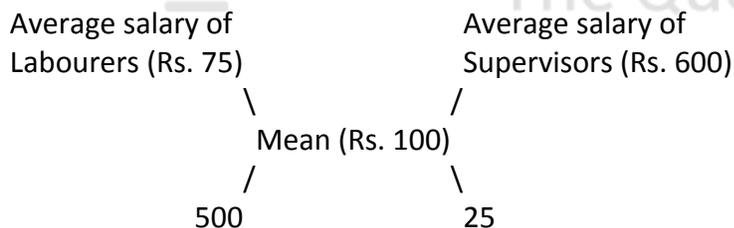
$2x = 12$

$x = 6$

Since temperature on the 5th June 2017 in Delhi = $7x = 7 \times 6 = 42$ degrees.

Hence, option (D) is correct.

2. Using Allegation method,



Required ratio is 500 : 25 or 20 : 1

$$\frac{\text{No. of Labourers}}{\text{No. of Supervisors}} = \frac{20}{1}$$

$$\Rightarrow \frac{840}{\text{No. of supervisors}} = \frac{20}{1}$$

Hence, no. of supervisors = 42

Therefore, option (B) is correct.



3. Let the total number of matches Dravid has played, till the start of world cup be X
So, total runs scored by Dravid till the beginning of the world cup be $35 \times X$

After the world cup, the new average will be $\frac{35 \times X + 355}{X + 6}$

According to question,

$$\frac{35 \times X + 355}{X + 6} = 37.5$$

$$\Rightarrow 37.5 \times X + 225 = 35 \times X + 355$$

$$\Rightarrow 2.5 \times x = 130$$

$$\Rightarrow X = 52$$

Hence, the total number of matches played by Dravid till date = $X + 6 = 52 + 6 = 58$

Therefore, option (D) is correct.

4.

Canberra 8:00 am (let Mon) 2:00 pm (Tue)	Distance = 7800km	Pretoria 3:00 am (Tue) 8:00 am (Tue)
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Let the plane speed with respect to the wind be u km/hr

The wind speed is 25 km/hr

Also, let Pretoria be t hours ahead of Canberra

Now,

$$\frac{7800}{u - 25} = 19 - t \dots\dots\dots \text{(i)}$$

$$\frac{7800}{u + 25} = 6 + t \dots\dots\dots \text{(ii)}$$

Adding (i) and (ii), we get

$$\frac{7800}{u - 25} + \frac{7800}{u + 25} = 25$$

$$\Rightarrow 7800(2u) = 25(u^2 - 625)$$

$$\Rightarrow 312(2u) = (u^2 - 625)$$

$$\Rightarrow u^2 - 624u - 625 = 0$$

$$\Rightarrow (u - 625) (u + 1) = 0$$

As, $u > 0$ then

$$u - 625 = 0 \Rightarrow u = 625$$

Substituting in (i), we get

$$\frac{7800}{600} = 19 - t \Rightarrow 13 = 19 - t \Rightarrow t = 6$$

Thus, is the time difference between Canberra and Pretoria is 6 hours.

Hence, option (D) is correct.

5. Let the weight of four friends A, B, C, D and E are a, b, c, d and e kgs respectively

From the question,

$$3a = b + c + d \text{ ----- (i)}$$

$$3b = a + c + d \text{ -----(ii)}$$

Subtracting equation (i) and (ii)

$$3a - 3b = b - a$$

$$b = a \text{ ---- (iii)}$$

Adding equation (i) and (ii)

$$3a + 3b = a + b + 2c + 2d$$

$$a + b = c + d \text{ ---- (iv)}$$

The average weight of A and C is equal to the average weight of C and D

It means, $a + c = c + d$

$$a = d$$

Put $a = d$ in equation (iv)

We get $b = c$

It means, $b = a = c = d$

The average weight of B and D is 60 kgs

$$b + d = 60 \times 2 = 120 \text{ kgs}$$

So, $b = d = 60 \text{ kgs} = a = c$

E is 30 kg heavier than C

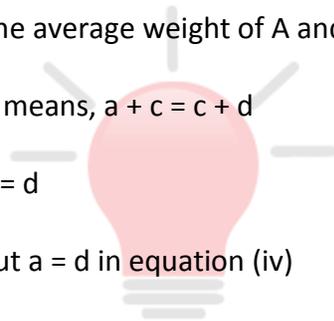
$$e = (60 + 30) \text{ kgs}$$

By solving, $e = 90 \text{ kg}$

The sum of the weight of A, B, C, D and E = $60 + 60 + 60 + 60 + 90 = 330 \text{ kgs}$

$$\text{The average} = \frac{330}{5} = 66 \text{ kgs}$$

Hence, option D is correct.



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6. Let the weight of A, B, C, and D is a, b, c, and d kgs respectively

According to the question,

$$a + b + c + d = 80 \times 4 = 320 \text{ kg} \dots\dots\dots (i)$$

If the weight of b were 33.33% less then his new weight

$$= (100 - 33.33)\% \text{ of } b = \frac{2b}{3}$$

$$\text{New average} = (100 - 12.5)\% \text{ of } 80 = 87.5\% \text{ of } 80 = 70$$

$$\text{Therefore, } a + \frac{2b}{3} + c + d = 70 \times 4 = 280 \text{ kg} \dots\dots\dots (ii)$$

Equation (i) - (ii)

$$\frac{B - 2b}{3} = \frac{b}{3} = 40 \text{ kg}$$

$$B = 120 \text{ kg}$$

Now, When the weight of A was increased by 25% then his new weight

$$= 125\% \text{ of } a = \frac{5a}{4} = 1.25a$$

And when the weight of D was increased by 40% then his new weight = 140% of d = 1.4d

$$\text{Then, the average weight} = 80 + 13.75 = 93.75 \text{ kg}$$

$$1.25a + 120 + c + 1.4d = 93.75 \times 4 = 375 \text{ kg}$$

$$1.25a + c + 1.4d = 375 - 120 = 255 \text{ kg} \dots\dots\dots (iii)$$

When the percentage increase in their weights were swiped

$$\text{The, } 1.4a + 120 + c + 1.25d = (80 + 12.25) \times 4 = 369$$

$$1.4a + c + 1.25d = 369 - 120 = 249 \dots\dots\dots (iv)$$

Equation (iii) - (iv)

$$-0.15a + 0.15d = 6$$

$$d - a = \frac{6}{0.15} = 40 \text{ kg}$$

Now, according to the question, a = 60% of d = 0.6d

$$\text{Therefore, } d - 0.6d = 0.4d = 40 \text{ kg}$$

$$D = 100 \text{ kg}$$

$$A = 0.6d = 60 \text{ kg}$$

$$B = 120 \text{ kg}$$

$$\text{Now, } 60 + 120 + c + 100 = 320$$

$$\text{Therefore, } c = 320 - 280 = 40 \text{ kg}$$

Hence, option A is correct.

7. Let the original average of the five numbers = x

Each number is multiplied by 2, so average = $2x$

And then $1 + 2 + 3 + 4 + 5 = 15$ is added to the total sum

So, the new average = $2x + \frac{15}{5} = 2x + 3$

$$\frac{2x + 3}{x} = \frac{225}{100} = \frac{9}{4}$$

$$x = 12$$

So, the original numbers are 8, 10, 12, 14, 16

Required difference = $16 - 8 = 8$

Hence, option D is correct.

8. Let $S_3 = D, D + z, D + 2z, D + 3z, D + 4z$

Difference between last and first = 12

$$4z = 12$$

$$z = 3$$

Average of all terms = 30

$$D + 2z = 30$$

$$D = 24$$

Second + Last = $2D + 5z = 48 + 15 = 63$

Hence, option B is correct.

9. 16 lit of water is taken out from D which makes water in it decrease by 40%.

So original quantity of water in D
 $= \frac{10}{4} \times 16 = 40$ lit and Now = 24 lit

From bucket B, 6 lit water is transferred to A and 5 lit is transferred to C

Total water taken out from B = 11 lit

Decrease in water = 33.33%

So original quantity of water = 33 lit and now = 22 lit

The average quantity of water in all buckets now = 30 lit

Before 16 lit was taken out average quantity

$$= 30 + \frac{16}{4} = 34 \text{ lit}$$

Total water in all buckets originally = $4 \times 34 = 136$ lit

Water in A and C originally = $136 - (33 + 40) = 63$ lit

Average water in A and C originally

$$= \frac{63}{2} = 31.5 \text{ lit}$$

Hence, option E is correct.

10. The average weight increases by 5 kg

So total increase in weight = $3 \times 60 + 18 \times 5 = 270$ kg

A : B : C = 3 : 4 : 2

So weight of A = 90, B = 120 and C = 60 kg

Required difference = $90 - 60 = 30$ kg

Hence, option E is correct.





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