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

- The age of Abhi, 7 years from now, will be 25% more than the age of Sunny 5 years hence. 5 years ago the average of age of Abhi's father and Abhi was 23 years. Abhi was 4 years old when Sunny was 1 year old. What will be the age of Abhi's father when Sunny was 10 years old?

A.34 years B.32 years C.40 years D.33 years E. 38 years
- From a class of 50 students numbered 1, 2, 3, 50, some students were selected randomly for republic day parade but condition was that the number should be either multiple of 2 or multiple of 5. The average weight of all the students who were not selected was 56 kg and the average weight of all the students who were selected was 58 kg. What was the average weight (in kg) of the class?

A. 57.8 B. 57.2 C. 56.9 D. 57.6 E. None of these
- Six students take an exam two times. The increase in average marks of all the students from first test to second test is 30%.The difference of the total marks of first five students in the two tests is 20% of their total marks in second test. If in the first test the marks of the sixth student were mistakenly written $\frac{1}{9}$ times more than the original, what is the actual percentage increase in his marks?

A. 57% B. 100% C. 72.22% D. 80 E. None of these
- Karan calculates the average of his marks in five subjects. By mistake he writes number of two subjects as reverse of original marks thereby increasing the average by 27 marks. If the incorrect numbers are in the ratio 13:10, what is the sum of the original numbers? (The marks awarded are from 01, 02 ... to 99)

A. 35 B. 31 C. 43 D. 26 E. None of these
- There are four sisters Bhavna, Geeta, Simran and Sania. The age of Sania is $(x - 5)$ years. The ratio of the age of Sania 5 years hence to the age of Geeta 2 years before is 5 : 4 . The ratio of the age of Bhavna 1 year before to the age of Sania 3 years hence is 1 : 4. Sania is 7 years older than Geeta, then find the age of Simran whose age is 1 year less than average age of other 3 sisters.

A.38 years B. 46 years C. 40 years D. 39 years E. 44 years
- Average weight of group of four persons P, Q, R and S is 67 Kg. If Q is excluded from the group and another person T is included in the group then average weight

decreases by 4 kg. If the average weight of T and P is 58 kg and weight of T is 18 kg more than the weight of P, then find the average weight of Q and T.

- A. 77 kg B. 68 kg C. 79 kg D. 72 kg E. 75 kg

7. The average marks in English scored by the students of a school in the Olympiad exam was 48. If 4 of these students who actually scored 5, 7, 9 and 11 are not counted, the average marks for the school in the Olympiad exam would have been 50. Find the number of students sent for the Olympiad by the school.

- A. 52 B. 84 C. 88 D. 90 E. 82

8. The present average age of three friends Sonia, Alia and Varun is $\frac{76}{3}$ years. The ratio of age of Sonia 2 years hence and age of Alia 4 years hence is 9 : 7 respectively, and the ratio of age of Alia 3 years ago and age of Varun 4 years ago is 3 : 2 respectively. Find the present age of Alia.

- A. 18 years B. 34 years C. 24 years D. 28 years E. None of these

9. A man purchases three items from a shop. He got one item gift wrapped for Rs12. He paid a total of Rs 312 and shopkeeper made a profit of 11.11% on the cost price of all the three items together. The average cost price of the other two items is Rs 75. The gift item was sold at a profit of 25% after a discount of 16.67%. What is the marked price of gift wrapped item?

- A. Rs. 196 B. Rs. 180 C. Rs. 172 D. Rs. 204 E. None of these

10. There are four identical glasses which have water in them. The volume of water in four glasses is 30%, 35%, 88% and 99%. The glasses are emptied in an empty container and then the same container is used to fill 60% volume of each glass with water. If the remaining water in container is 60ml, what is the final total quantity of water in all the four glasses?

- A. 1800 ml B. 1200 ml C. 1500 ml D. 1260 ml E. None of these

11. A salesman sells 10 Notebooks on Monday, 13 Notebooks on Tuesday, 12 Notebooks on Wednesday, 11 Notebooks on Thursday and 12 Notebooks on Friday. If the salesman is paid Rs. x for selling every 10 Notebooks and Rs. y for selling every extra Notebook, then find the average of daily earning of the salesman in rupees for the five days?

- A. $x + \frac{8}{5}y$ B. $\frac{5x + 9y}{5}$ C. $10x + \frac{8}{5}y$ D. $5x + 8y$ E. None of these

12. The average height of 3 boys Bikesh, Sam and Suhas is $208\frac{1}{3}$ inches while the average height of Bikesh, Vihal and Rakesh is $203\frac{1}{3}$ inches. What is the average height of Bikesh, Sam, Suhas, Vihal and Rakesh?

- A. 65 inches B. 66 inches C. $\frac{197}{3}$ inches D. 64 inches E. Can't be determined

13. Aman goes to park daily. His last week average speed with which he completed one round of the park was 47Km/h, for the first four days was 37Km/h, and that for the last four days was 52.5Km/h. Find out the time taken by Aman to travel 203 Km if he travels with the speed of the fourth day.

- A. 7 hours B. 8 hours C. 6 hours D. 5.5 hours E. None of these

14. In an office some persons are officers and some are non-officer. The number of officers is 30. The average salary of officers is Rs.1040 and that of non-officers is Rs.400. If the average salary of entire staff in office (officers + Non – officers) is Rs.500 per month, then what is the average of total number of employees (officers + Non – officers) in the office?

- A. 49 B. 89 C. 92 D. 96 E. None of these

15. An exam was conducted in a state over 222 centers. The average number of applicants per centre was found to be 1560. However, it was later realized that in one centre, the number of applicants was counted as 1857 instead of 1747. What was the correct average number of applicants per centre (upto two decimals)?

- A. 1557.87 B. 1558.20 C. 1558.92 D. 1559.51 E. 1559.78

16. The average of fifteen numbers is 54. If the sum of first six numbers is 126, the average of the next six numbers is 46 and the 14th and 15th numbers exceed the 13th number by 15 and 18 respectively, then the 14th number is

- A. 130 B. 140 C. 135 D. 142 E. 125

17. A, B, C, D and E are five persons. The weight of A, B and C is 90%, 112% and 94% respectively of the average weight of all five. The ratio of weight of D and E is 6 : 11. The difference between the weight of D and E is 75kg. What is the average weight of all the five persons?

- A. 84 kg B. 90 kg C. 76 kg D. 69 kg E. None of these

18. Average marks obtained in English by 17 girls of a class is 35. The marks obtained by them is arranged in ascending order form and in Arithmetic progression. If the marks

obtained by the 2nd ,6th ,9th ,12th and 16th position are removed from the table, then find the new average of marks obtained by the remaining girls in English.

- A. 33 B. 35 C. 37 D. Can't be determined E. None of these

19. Average marks of group of students is 48. Out of these, 3 students with marks 43, 68 and 51 are removed and a new student with a score of 84 is added to the list. If the number of students in the group was 8, then find the percentage increase in the average marks with respect to the initial average?

- A. 6.25% B. 5.75% C. 8.25% D. 6.75% E. None of these

20. 'N' is the number employees in a Bengaluru based IT company. The average age of employees working in the company is 35 years. What will be the average age of these employees in next two years when 10 employees will retire. Given that, retirement age is 60 years and $N = 40$.

- A. $\frac{87}{13}$ B. $\frac{83}{7}$ C. $\frac{86}{13}$ D. $\frac{86}{3}$ E. None of these

21. Rajiv decided to go for a dinner with his 12 friends. He paid Rs. 145 and each of his friends paid some equal amount. They later found out that the average amount that should be paid by all of them was 5 more than what was actually paid by each of his friends. How much money did each of his friend pay?

- A. Rs. 80 B. Rs. 90 C. Rs. 150 D. Rs. 100 E. None of these

22. A family has 5 members, Father, mother and their three children. The average age of family immediately after the birth of first, second and third child was 16, 15.75 and 14.2 years respectively. What is the age of elder child, if the present age of entire family is 15.2 years?

- A. 6 yeears B. 7 years C. 8 years D. 5 years E. 4 years

23. Average of Eight numbers is 75. If highest and lowest number is removed then average becomes 80. If the ratio of highest number to lowest number is 3 : 1, then highest number is what percent of sum of the all the eight numbers?

- A. 12% B. 20% C. 18% D. 24% E. 15%

24. On the occasion of teacher's day, some number of boys and girls contributed some money. The average contribution of boys was Rs. 250 and that of girls was Rs. 100. If the average contribution per student was Rs. 160 on the whole then what percent of students are boys?

A. 60% B. 44% C. 40% D. 80% E. None of these

25. The average number of chocolates that some number of boys have is 240 and average number of chocolates that some number of girls have is 180, . If each of the boys eat 10 chocolates then the average number of chocolates with all the students become 200. The total number of boys is what percentage of the total number of students?

A. 75% B. 40% C. 60% D. 62.5% E. None of these

26. In company ABC, the best performing team won bonus. The captain of the best performing team who got highest bonus of 20 % was equal to the 4 times of what rest of his team members got. Find the team size who won bonus.

A. 20 B. 16 C. 17 D. 22 E. None of these

27. The average of 15 numbers is 26. If each number is first multiplied by 6 then increased by 6 then find the new average.

A. 122 B. 38 C. 162 D. 96 E. None of these

28. The average expenditure of Vivek from June to November is Rs. 8550 and he spent Rs. 1850 in June and Rs.2420 in December. The average expenditure from July to December is?

A. Rs. 8640 B. Rs. 8645 C. Rs. 8650 D. Rs. 8675 E. None of these

29. The average weight of 10 persons was increased by 2.5 kg when Ram comes in place of Mohan but if Sohan comes in place of Mohan then the average weight of the 10 persons was increased by 3.5 kg. If the weight of Mohan is 55 kg then what is the average weight of Ram, Mohan, and Sohan?

A. 65 kg B. 70 kg C. 75 kg D. 80 kg E. None of these

30. The average age of a family is 35 years. After 10 years, twins were born in the family then the average age of the family becomes 36 years. How many members are there in the family except twins?

A. 9 B. 7 C. 6 D. 10 E. None of these

31. The average price of 5 pens and 15 pencils is Rs. 8.5 . The price of 4 pens is Rs. 3 more than the price of 7 pencils. What will be the average price of 7 pen and 5 pencils?

A. Rs. 10 B. Rs. 11 C. Rs.12.5 D. Rs. 10.5 E. None of these

32. The average height of the first six students is 170 cm, the average height of the last eight students is 175 cm. The average height of the total 16 students is 180 cm. Find the average height of the rest two students.

- A. 210 cm B. 250 cm C. 240 cm D. 230 cm E. 260 cm

33. The average salary of each trainee in an startup is Rs. 90. The average salary of 16 trainees is Rs.708.75 and the average salary of the rest is Rs. 75. How many trainees does the startup have?

- A. 670 B. 676 C. 682 D. 840 E. None of these

34. In a hostel, food is available for 200 students for 50 days. After 10 days, 50 more students join the hostel. For how many more days will the food last?

- A. 42 days B. 32 days C. 30 days D. 40 days E. None of these

35. The average weight of five friends P, Q, R, S, and T is $(x + 6)$ kg while the average weight of R and T is $(x - 6)$ kg. If the weight of another person U is also added, then average weight of all of them is reduced by 5 kg. Find the value of 'x' if average weight of P, Q, S and U is 94.5 kg.

- A. 74 B. 80 C. 84 D. 90 E. 94

36. Average age of a class of 15 students is 24 years. Average age of the class is increased by 2 years when the age of the class teacher and principal is added. If the difference between the ages of the class teacher and principal is 18 years, then find the age of class teacher.

- A. 32 years B. 38 years C. 44 years D. 50 years E. Can't be determined

37. Salary of Gaurav is 166.67% of his brother Aman. Aman and Gaurav gave their salary of "x" months and "y" months respectively to their father. Their father distributed the total amount equally between them such that each of them receives Rs. 126000. If the ratio of x and y is 5:4, what is difference of the total amount given Aman and Gaurav to their father?

- A. Rs. 35800 B. Rs. 32000 C. Rs. 36200 D. Rs. 36000 E. None of these

38. A, B and C are brothers and they give the total amount of money with them to their father who distributes the total money equally between them such that each one of them gets Rs 480. After distribution the money with A becomes 75%, money with B becomes $\frac{12}{13}$ and that with C increases by $\frac{500}{7}$ % of their respective initial amount. What was the difference between the original amount of money with A and C?

- A. Rs. 380 B. Rs. 360 C. Rs. 420 D. Rs. 300 E. None of these

- 39.** The weight of Varun , Rahul and Priyanka in 2011 was is in the ratio 6 : 5 : 7. In 2016 weight of Varun became 150%, weight of Rahul became 160% and the weight of Priyanka increased by $300/7$ % as compared to their weight in 2011. If the average increase in their weight is 7.2kg, what is the difference between the weight of Varun in 2016 and the weight of Priyanka in 2011?
- A. 5.0 kg B. 4.8 kg C. 5.2 kg D. 4.6 kg E. None of these
- 40.** The weight of A, B and C is recorded and their recorded weight is in the ratio 13 : 6 : 5 respectively. The average recorded weight of all three came out to be 56kg. Later it was noticed that weight of A was written 44.44% more, weight of B was written 14.28% less and weight of C was written 33kg more. What is the original average weight of three friends?
- A. 38 kg B. 36 kg C. 42 kg D. 44 kg E. None of these
- 41.** Average temperature from Sunday to Wednesday is 34° C while average temperature from Wednesday to Saturday is 38° C. Average temperature throughout the week is 36° C. Find the temperature on Wednesday.
- A. 36° C B. 38° C C. 34° C D. 32° C E. None of these
- 42.** The average weight of 65 students in a class was calculated as 32 kg. It was later found that the weight of two students in the class was wrongly calculated. The actual weight of one of the girls in the class was 26 kg, but it was calculated as 30 kg and the weight of a boy in the class was 42 kg whereas it was calculated as 36 kg. What is the actual average weight of the 65 students in the class?
- A. 31.44 kg B. 32.03 kg C. 31.57 kg D. 33.12 kg E. None of these
- 43.** Average weight of 45 students of a class is 40. Two new students joined the class and average weight of the class decreased by 1 Kg. Find the average weight of the two new students.
- A. 16.5 kg B. 15.4 kg C. 14.2 kg D. 13.7 kg E. None of these
- 44.** Average of a set of five consecutive even numbers is 48. Average of another set of five consecutive odd numbers is 49. Find the product of smallest even number of the first set and largest odd number of the second set.
- A. 3223 B. 2323 C. 3232 D. 2332 E. None of these
- 45.** The average age of a group of 30 friends is 34 years. The average age of the first 10 friends is 31 years and the average age of the last 18 friends is 33 years. What will be the average age of the 11th and 12th friend?

A. 52 years B. 54 years C. 56 years D. 50 years E. 58 years

46. A sequence contains eleven terms, which are consecutive even integers. The average of the second and the seventh term is 15. Find the average of all the terms.

A. 15 B. 16 C. 17 D. 18 E. None of these

47. The average weight of a group of $(x - 4)$ students is $(x + 5)$ kg. If a teacher of weight 54 kg joins the class, then average weight of the group is increased by 1 kg. Find the strength of the group excluding the teacher.

A. 22 B. 25 C. 29 D. 34 E. 38

48. In Vrindavan Housing Society the monthly society expenditure has a fixed and a variable component, such that the variable component depends on the number of members in the society. If there are 50 members, then each member has to pay Rs. 110 and if there are 30 more members then each member has to pay Rs. 80. If each member pays Rs. 130, then how many members are there in the society?

A. 45 B. 55 C. 40 D. 60 E. None of these

49. The average age of 40 participants of a quiz is 20 years. After some time 5 more participants joined them and then average age is increased by 3 years. Find the average age of the 5 new participants.

A. 47 years B. 48 years C. 50 years D. 45 years E. 46 years

50. Ronny in his football career, scored 12 goals on an average in 10 matches. If he scored 11 goals on an average in first 4 matches and 13 goals on an average in the last 4 matches, then find the average of the goals scored by him in the remaining 2 matches.

A. 11 goals B. 12 goals C. 13 goals D. 10 goals E. 9 goals

1. अभी की उम्र, अब से 7 साल बाद, सनी 5 साल बाद की उम्र की तुलना में 25% अधिक होगी। 5 साल पहले अभी के पिता और अभी की उम्र का औसत 23 साल था। अभी 4 साल का था जब सनी 1 साल का था। जब सनी 10 साल का था तब अभी के पिता की उम्र क्या होगी?

A. 34 साल B. 32 साल C. 40 साल D. 33 साल E. 38 साल

2. 50 छात्रों की एक कक्षा से 1, 2, 3, 50 की संख्या में, कुछ छात्रों को गणतंत्र दिवस की परेड के लिए यादृच्छिक रूप से चुना गया था, लेकिन शर्त यह थी कि संख्या या तो 2 या 5 के गुणक में होनी चाहिए। सभी का औसत वजन 56 किलोग्राम था जिन छात्रों का चयन नहीं किया गया और चुने गए सभी छात्रों का औसत वजन 58 किलोग्राम था। कक्षा का औसत वजन (किलो में) क्या था?

A. 57.8 B. 57.2 C. 56.9 D. 57.6 E. इनमें से कोई नहीं।

3. छह छात्र दो बार परीक्षा देते हैं। पहले परीक्षण से दूसरे परीक्षण तक सभी छात्रों के औसत अंकों में वृद्धि 30% है। दो परीक्षणों में पहले पांच छात्रों के कुल अंकों का अंतर दूसरे परीक्षण में उनके कुल अंकों का 20% है। यदि पहले परीक्षण में छठे छात्र के अंक गलती से मूल से $\frac{1}{9}$ गुना अधिक लिखे गए थे, तो उसके अंकों में वास्तविक प्रतिशत वृद्धि क्या है?

A. 57% B. 100% C. 72.22% D. 80 E. इनमें से कोई नहीं।

4. करन पांच विषयों में अपने अंकों के औसत की गणना करता है। गलती से वह दो विषयों के मूल अंकों के अंक को बदल कर लिखता है जिससे औसतन 27 अंक बढ़ जाते हैं। यदि गलत संख्या 13:10 के अनुपात में है, तो मूल संख्याओं का योग क्या है? (निश्चित किए गए अंक 01, 02 ... से 99 तक हैं)

A. 35 B. 31 C. 43 D. 26 E. इनमें से कोई नहीं।

5. चार बहनें भावना, गीता, सिमरन और सानिया हैं। सानिया की उम्र $(x - 5)$ वर्ष है। 5 साल बाद सानिया की उम्र और 2 साल पहले गीता की उम्र का अनुपात 5: 4 है। 1 वर्ष पहले भावना की आयु और 3 वर्ष बाद सानिया की आयु का अनुपात 1: 4 है। सानिया गीता से 7 वर्ष बड़ी है, फिर सिमरन जिसकी आयु अन्य 3 बहनों की औसत आयु से 1 वर्ष कम है की आयु ज्ञात करें।

A. 38 वर्ष B. 46 वर्ष C. 40 वर्ष D. 39 वर्ष E. 44 वर्ष

6. चार व्यक्तियों P, Q, R और S के समूह का औसत वजन 67 किलोग्राम है। यदि Q को समूह से बाहर रखा गया है और एक अन्य व्यक्ति T को समूह में शामिल किया गया है तो औसत वजन 4 किलोग्राम कम हो जाता है। यदि T और P का औसत वजन 58 किलोग्राम है और T का वजन P के वजन से 18 किलोग्राम अधिक है, तो Q और T का औसत भार ज्ञात करें।

A. 77 किलोग्राम B. 68 किलोग्राम C. 79 किलोग्राम D. 72 किलोग्राम E. 75 किलोग्राम

7. ओलंपियाड परीक्षा में एक स्कूल के छात्रों द्वारा बनाए गए अंग्रेजी में औसत अंक 48 थे। यदि इनमें से 4 छात्र जिन्होंने वास्तव में 5, 7, 9 और 11 अंक प्राप्त किये हैं, उनकी गिनती नहीं की जाती है, तो ओलंपियाड परीक्षा में स्कूल के औसत अंक 50 होंगे। स्कूल द्वारा ओलंपियाड के लिए भेजे गए छात्रों की संख्या ज्ञात कीजिए।

A. 52 B. 84 C. 88 D. 90 E. 82

8. तीन दोस्तों सोनिया, आलिया और वरुण की वर्तमान औसत आयु 76/3 वर्ष है। 2 वर्ष बाद सोनिया की आयु और 4 वर्ष बाद आलिया आयु का अनुपात क्रमशः 9: 7 है और 3 वर्ष पहले आलिया की आयु और 4 वर्ष पहले वरुण की आयु का अनुपात क्रमशः 3: 2 है। आलिया की वर्तमान आयु ज्ञात करें।

- A. 18 वर्ष B. 34 वर्ष C. 24 वर्ष D. 28 वर्ष E. इनमें से कोई नहीं।

9. एक आदमी एक दुकान से तीन सामान खरीदता है। उसने एक गिफ्ट आइटम 12 रु में पैक कराया। उन्होंने कुल 312 रुपये का भुगतान किया और दुकानदार ने सभी तीन वस्तुओं की लागत मूल्य पर 11.11% का लाभ कमाया। अन्य दो वस्तुओं की औसत लागत मूल्य 75 रुपये है। गिफ्ट को 16.67% की छूट के बाद 25% के लाभ पर बेचा गया था। पैक किये गए गिफ्ट आइटम की चिह्नित कीमत क्या है?

- A. Rs. 196 B. Rs. 180 C. Rs. 172 D. Rs. 204 E. इनमें से कोई नहीं।

10. चार समान गिलास हैं जिनमें पानी है। चार गिलास में पानी की मात्रा 30%, 35%, 88% और 99% है। एक खाली बरतन में गिलास खाली कर दिए जाते हैं और फिर उसी बरतन का उपयोग प्रत्येक गिलास के 60% मात्रा को पानी से भरने के लिए किया जाता है। यदि बरतन में शेष पानी 60 मिलीलीटर है, तो सभी चार गिलास में पानी की कुल मात्रा क्या है?

- A. 1800 मिलीलीटर B. 1200 मिलीलीटर C. 1500 मिलीलीटर D. 1260 मिलीलीटर E. इनमें से कोई नहीं।

11. एक विक्रेता सोमवार को 10 नोटबुक, मंगलवार को 13 नोटबुक, बुधवार को 12 नोटबुक, गुरुवार को 11 नोटबुक और शुक्रवार को 12 नोटबुक बेचता है। यदि विक्रेता को प्रत्येक 10 नोटबुक बेचने पर x रु और अतिरिक्त प्रत्येक नोटबुक बेचने पर y रु मिलते हैं तो पांच दिनों के लिए रुपये में विक्रेता की औसत दैनिक कमाई का पता लगाएं?

- A. $x + \frac{8}{5}y$ B. $\frac{5x + 9y}{5}$ C. $10x + \frac{8}{5}y$ D. $5x + 8y$ E. इनमें से कोई नहीं।

12. 3 लडको बीकेश, सैम और सुहास की औसत लम्बाई 208/3 इंच है जबकि बीकेश, विहल और राकेश की औसत लम्बाई 203/3 इंच है। बीकेश, सैम, सुहास, राकेश और विहल की औसत लम्बाई बताइए।

- A. 65 इंच B. 66 इंच C. $\frac{197}{3}$ इंच D. 64 इंच E. निर्धारित नहीं किया जा सकता

13. अमन प्रतिदिन पार्क जाता है। उसकी पिछले हफ्ते की औसत चाल 47 किमी/घंटा थी, जिससे उसने पार्क का पूरा चक्कर लगाया था, पहले चार दिनों के लिए उसकी औसत चाल 37 किमी/घंटा और आखिरी चार दिनों के लिए 52.5 किमी/घंटा थी। ज्ञात कीजिये यदि अमन चौथे दिन की चाल से चलता है तो 203 किमी दूरी को वह कितने समय में तय करेगा?

- A. 7 घंटे B. 8 घंटे C. 6 घंटे D. 5.5 घंटे E. इनमें से कोई नहीं।

14. किसी कार्यालय में कुछ व्यक्ति अधिकारी और कुछ गैर-अधिकारी है। अधिकारियों की संख्या 30 है। अधिकारियों की औसत आय 1040 रूपये है और गैर अधिकारियों की औसत आय 400 रूपये है। यदि समस्त कर्मचारियों की औसत आय (अधिकारी + गैर-अधिकारी) 500 रूपये प्रति माह है तो कार्यालय में कुल कर्मचारियों (अधिकारी + गैर-अधिकारी) की संख्या का औसत कितना है?

- A. 49 B. 89 C. 92 D. 96 E. इनमें से कोई नहीं।

15. एक राज्य में 222 केन्द्रों पर एक परीक्षा आयोजित की गयी। प्रत्येक केंद्र पर औसत आवेदक 1560 थे। तथापि बाद में देखा गया कि एक केंद्र पर आवेदकों की गिनती 1747 के स्थान पर 1857 कर ली गयी। प्रत्येक केंद्र पर औसत आवेदकों की सही संख्या क्या थी (दो दशमलव तक)?

- A. 1557.87 B. 1558.20 C. 1558.92 D. 1559.51 E. 1559.78

16. पंद्रह संख्याओं का औसत 54 है। यदि पहली 6 संख्याओं का योग 126 है, अगली 6 संख्याओं का औसत 46 और 14वीं और 15वीं संख्या 13वीं संख्या से क्रमशः 15 और 18 अधिक है तो 14वीं संख्या है?

- A. 130 B. 140 C. 135 D. 142 E. 125

17. A, B, C, D और E पाँच व्यक्ति हैं। A, B और C का वजन सभी पाँचों के औसत वजन का क्रमशः 90%, 112% और 94% है। D और E के वजन का अनुपात 6: 11 है। D और E के वजन के बीच का अंतर 75 किग्रा है। पाँच व्यक्तियों का औसत वजन क्या है?

- A. 84 किग्रा B. 90 किग्रा C. 76 किग्रा D. 69 किग्रा E. इनमें से कोई नहीं।

18. पांच साल पहले, पिता की उम्र बेटे की उम्र की 5 गुनी थी। दस साल बाद, पिता की आयु बेटे की आयु का 2.5 गुना हो जाएगी। वर्तमान में, उनकी आयु के योग और उनकी आयु के अंतर का अनुपात क्या है?

- A. 33 B. 35 C. 37 D. निर्धारित नहीं किया जा सकता E. इनमें से कोई नहीं।

19. छात्रों के समूह के औसत अंक 48 हैं। इनमें से 43, 68 और 51 अंक वाले 3 छात्रों को हटा दिया गया है और 84 अंकों वाले एक नए छात्र को सूची में जोड़ा गया है। यदि समूह में छात्रों की संख्या 8 थी, तो प्रारंभिक औसत के संबंध में औसत अंकों में प्रतिशत वृद्धि का पता लगाएं?

- A. 6.25% B. 5.75% C. 8.25% D. 6.75% E. इनमें से कोई नहीं।

20. बेंगलुरु स्थित एक आईटी कंपनी में कर्मचारियों की संख्या 'N' है। कंपनी में काम करने वाले कर्मचारियों की औसत आयु 35 वर्ष है। अगले दो वर्षों में इन कर्मचारियों की औसत आयु क्या होगी जबकि 10 कर्मचारी सेवानिवृत्त होंगे। यह देखते हुए कि सेवानिवृत्ति की आयु 60 वर्ष और $N = 40$ है।

- A. $\frac{87}{13}$ B. $\frac{83}{7}$ C. $\frac{86}{13}$ D. $\frac{86}{3}$ E. इनमें से कोई नहीं।

21. राजीव ने अपने 12 दोस्तों के साथ रात के खाने पर जाने का फैसला किया। उसने 145 रुपये का भुगतान किया और उनके प्रत्येक मित्रों ने कुछ समान राशि में भुगतान किया। उन्हें बाद में पता चला कि उन सभी द्वारा भुगतान की जाने वाली औसत राशि उनके प्रत्येक मित्र द्वारा वास्तव में भुगतान की गई राशि से 5 अधिक थी। उसके प्रत्येक मित्र द्वारा कितनी राशि का भुगतान किया गया?

- A. Rs. 80 B. Rs. 90 C. Rs. 150 D. Rs. 100 E. इनमें से कोई नहीं।

22. एक परिवार में 5 सदस्य, पिता, माता और उनके तीन बच्चे हैं। पहले, दूसरे और तीसरे बच्चे के जन्म के तुरंत बाद परिवार की औसत आयु क्रमशः 16, 15.75 और 14.2 वर्ष थी। बड़े बच्चे की उम्र क्या है, अगर पूरे परिवार की वर्तमान आयु 15.2 वर्ष है?

- A. 6 वर्ष B. 7 वर्ष C. 8 वर्ष D. 5 वर्ष E. 4 वर्ष

23. आठ संख्याओं का औसत 75 है। यदि उच्चतम और निम्नतम संख्या को हटा दिया जाए तो औसत 80 हो जाता है। यदि उच्चतम संख्या और निम्नतम संख्या का अनुपात 3: 1 है, तो उच्चतम संख्या सभी आठ संख्याओं के योग का कितना प्रतिशत है?

- A. 12% B. 20% C. 18% D. 24% E. 15%

24. शिक्षक दिवस के अवसर पर, कुछ लड़कों और लड़कियों ने कुछ पैसे का योगदान दिया। लड़कों का औसत योगदान 250 रु और लड़कियों का 100 रु था। यदि प्रति छात्र औसत योगदान 160 रुपये था तो कितने प्रतिशत छात्र लड़के थे?

- A. 60% B. 44% C. 40% D. 80% E. इनमें से कोई नहीं।

25. कुछ लड़के जिनके पास औसत 240 है और कुछ लड़कियाँ जिनके पास औसत 180 चॉकलेट है। यदि प्रत्येक लड़का 10 चॉकलेट खाता है तो सभी छात्रों के साथ चॉकलेट की औसत संख्या 200 हो जाती है। लड़कों की कुल संख्या छात्रों की कुल संख्या का कितना प्रतिशत क्या है?

- A. 75% B. 40% C. 60% D. 62.5% E. इनमें से कोई नहीं।

26. कंपनी ABC में, सबसे अच्छा प्रदर्शन करने वाली टीम ने बोनस जीता। सर्वश्रेष्ठ प्रदर्शन करने वाली टीम जिसे 20% का उच्चतम बोनस मिला और उसके कप्तान को उनकी टीम के बाकी सदस्यों के 4 गुना के बराबर बोनस मिला था। उस टीम के कुल सदस्यों का पता लगाएं जिसने बोनस जीता।

- A. 20 B. 16 C. 17 D. 22 E. इनमें से कोई नहीं।

27. 15 संख्याओं का औसत 26 है। यदि प्रत्येक संख्या को पहले 6 से गुणा किया जाये और फिर 6 जोड़ दिया जाये तो नया औसत ज्ञात कीजिये।

- A. 122 B. 38 C. 162 D. 96 E. इनमें से कोई नहीं।

28. विवेक का औसत खर्च जून से नवंबर तक 8550 रुपये है और उसने जून में 1850 रुपये और दिसंबर में 2420 रुपये खर्च किए। जुलाई से दिसंबर तक का औसत खर्च है?

- A. Rs. 8640 B. Rs. 8645 C. Rs. 8650 D. Rs. 8675 E. इनमें से कोई नहीं।

29. जब मोहन के स्थान पर राम आता है तो 10 लोगों का औसत वजन 2.5 किलोग्राम बढ़ जाता है, लेकिन अगर सोहन मोहन के स्थान पर आता है तो 10 लोगों का औसत वजन 3.5 किलोग्राम बढ़ जाता है यदि मोहन का वजन 55 किलोग्राम है तो राम, मोहन और सोहन का औसत वजन क्या होगा ?

- A. 65 किग्रा B. 70 किग्रा C. 75 किग्रा D. 80 किग्रा E. इनमें से कोई नहीं।

30. एक परिवार की औसत आयु 35 वर्ष है। 10 साल बाद परिवार में जुड़वा बच्चों का जन्म हुआ, फिर परिवार की औसत आयु 36 वर्ष हो गई। जुड़वा बच्चों को छोड़कर परिवार में कितने सदस्य हैं?

- A. 9 B. 7 C. 6 D. 10 E. इनमें से कोई नहीं।

31. 5 पेन और 15 पेंसिल की औसत कीमत 8.5 रुपये है। 4 पेंसिल की कीमत 7 पेंसिल की कीमत से 3 रुपये अधिक है। 7 पेन और 5 पेंसिल की औसत कीमत क्या होगी?

A. Rs. 10

B. Rs. 11

C. Rs.12.5

D. Rs. 10.5

E. इनमें से कोई नहीं।

32. पहले छह छात्रों की औसत लम्बाई 170 सेमी है, अंतिम आठ छात्रों की औसत लम्बाई 175 सेमी है। कुल 16 छात्रों की औसत लम्बाई 180 सेमी है। बाकी दो छात्रों की औसत लम्बाई ज्ञात कीजिए।

A. 210 सेमी

B. 250 सेमी

C. 240 सेमी

D. 230 सेमी

E. 260 सेमी

33. एक स्टार्टअप में प्रत्येक प्रशिक्षु का औसत वेतन 90 रु है। 16 प्रशिक्षुओं का औसत वेतन 708.75 रु है और शेष का औसत वेतन 75 रु है। स्टार्टअप में कितने प्रशिक्षु हैं?

A. 670

B. 676

C. 682

D. 840

E. इनमें से कोई नहीं।

34. एक छात्रावास में, 50 दिनों के लिए 200 छात्रों के लिए भोजन उपलब्ध है। 10 दिनों के बाद, 50 और छात्र छात्रावास में शामिल होते हैं। भोजन कितने दिनों तक चलेगा?

A. 42 दिन

B. 32 दिन

C. 30 दिन

D. 40 दिन

E. इनमें से कोई नहीं।

35. पांच दोस्तों P, Q, R, S, और T का औसत वजन $(x + 6)$ किग्रा है जबकि R और T का औसत वजन $(x - 6)$ किग्रा है। यदि किसी अन्य व्यक्ति U का वजन भी जोड़ दिया जाता है, तो उन सभी का औसत वजन 5 किग्रा कम हो जाता है। यदि 'x' का मान ज्ञात करें, यदि P, Q, S और U का औसत वजन 94.5 किलोग्राम है।

A. 74

B. 80

C. 84

D. 90

E. 94

36. 15 छात्रों की एक कक्षा की औसत आयु 24 वर्ष है। कक्षा शिक्षक और प्रिंसिपल की आयु को जोड़ने पर कक्षा की औसत आयु 2 वर्ष बढ़ जाती है। अगर कक्षा शिक्षक और प्रिंसिपल के बीच उम्र का अंतर 18 साल है, तो कक्षा शिक्षक की उम्र का पता लगाएं।

A. 32 वर्ष

B. 38 वर्ष

C. 44 वर्ष

D. 50 वर्ष

E. निर्धारित नहीं किया जा सकता।

37. गौरव का वेतन उसके भाई अमन का 166.67% है। अमन और गौरव ने अपने पिता को क्रमशः "x" महीने और "y" महीने का वेतन दिया। उनके पिता ने उनके बीच कुल राशि समान रूप से वितरित की, जिसमें से प्रत्येक को 126000 रु मिली। यदि x और y का अनुपात 5: 4 है, तो अमन और गौरव द्वारा उनके पिता को दी गई कुल राशि में क्या अंतर है?

A. Rs. 35800

B. Rs. 32000

C. Rs. 36200

D. Rs. 36000

E. इनमें से कोई नहीं।

38. A, B और C भाई हैं और उनके पास जितनी भी धनराशि है वे अपने पिता को दे देते हैं जो कुल धन को सभी के बीच समान रूप से वितरित करते हैं जैसे कि उनमें से प्रत्येक को 480 रुपये मिलते हैं। वितरण के बाद A के पास धन 75% हो जाता है, B 12/13 हो जाता है और C के पास उनकी संबंधित प्रारंभिक राशि 500/7% बढ़ जाती है। A और C की मूल राशि के बीच क्या अंतर था?

A. Rs. 380

B. Rs. 360

C. Rs. 420

D. Rs. 300

E. इनमें से कोई नहीं।

39. 2011 में वरुण, राहुल और प्रियंका का वजन 6: 5: 7 के अनुपात में था। 2011 की तुलना में 2016 में वरुण का वजन 150% हो गया, राहुल का वजन 160% हो गया और प्रियंका का वजन 300/7% बढ़ गया। अगर उनके वजन में औसत वृद्धि 7.2 किग्रा है, तो 2016 में वरुण के वजन और 2011 में प्रियंका के वजन में क्या अंतर है?

A. 5.0 किग्रा B. 4.8 किग्रा C. 5.2 किग्रा D. 4.6 किग्रा E. इनमें से कोई नहीं।

40. एक कंपनी में 78000 कर्मचारी हैं जिनमें से पुरुष और महिला क्रमशः 7: 6 अनुपात में हैं। पुरुषों में से 35% HR के रूप में काम कर रहे हैं और महिलाओं में से 25% HR के रूप में काम कर रही हैं। कंपनी में HR के रूप में काम कर रहे कर्मचारियों की कुल संख्या क्या है?

A. 38 किग्रा B. 36 किग्रा C. 42 किग्रा D. 44 किग्रा E. इनमें से कोई नहीं।

41. रविवार से बुधवार तक का औसत तापमान $34^{\circ}C$ है जबकि बुधवार से शनिवार तक का औसत तापमान $38^{\circ}C$ है। सप्ताह भर में औसत तापमान $36^{\circ}C$ है। बुधवार को तापमान ज्ञात कीजिए।

A. $36^{\circ}C$ B. $38^{\circ}C$ C. $34^{\circ}C$ D. $32^{\circ}C$ E. इनमें से कोई नहीं।

42. दिया गया है कि 24 कैरेट सोना शुद्ध सोना है, 18 कैरेट सोना शुद्ध सोने का $\frac{3}{4}$ है और 20 कैरेट सोना शुद्ध सोने का $\frac{5}{6}$ है, 18 कैरेट सोने में और 20 कैरेट सोने में शुद्ध सोने का अनुपात है।

A. 31.44 किग्रा B. 32.03 किग्रा C. 31.57 किग्रा D. 33.12 किग्रा E. इनमें से कोई नहीं।

43. एक कक्षा के 45 छात्रों का औसत वजन 40 है। दो नए छात्र कक्षा में शामिल हुए और कक्षा का औसत वजन 1 किलोग्राम घटा। दो नए छात्रों का औसत वजन ज्ञात कीजिए।

A. 16.5 किग्रा B. 15.4 किग्रा C. 14.2 किग्रा D. 13.7 किग्रा E. इनमें से कोई नहीं।

44. क्रमागत पांच सम संख्याओं के सेट का औसत 48 है। एक अन्य क्रमागत पांच विषम संख्याओं के सेट का औसत 49 है। पहले सेट की न्यूनतम सम संख्या तथा दूसरे सेट की अधिकतम विषम संख्या का गुणनफल क्या होगा?

A. 3223 B. 2323 C. 3232 D. 2332 E. इनमें से कोई नहीं।

45. 30 दोस्तों के समूह की औसत आयु 34 वर्ष है। पहले 10 दोस्तों की औसत आयु 31 वर्ष और अंतिम 18 दोस्तों की औसत आयु 33 वर्ष है। 11 वें और 12 वें मित्र की औसत आयु क्या होगी?

A. 52 वर्ष B. 54 वर्ष C. 56 वर्ष D. 50 वर्ष E. 58 वर्ष

46. एक अनुक्रम में ग्यारह पद हैं, जो क्रमागत सम पूर्णांक हैं। दूसरे और सातवें पद का औसत 15। सभी पदों का औसत ज्ञात कीजिए।

A. 15 B. 16 C. 17 D. 18 E. इनमें से कोई नहीं।

47. $(x - 4)$ छात्रों के समूह का औसत वजन $(x + 5)$ किलोग्राम है। यदि 54 किलो वजन का शिक्षक कक्षा में शामिल होता है, तो समूह का औसत वजन 1 किलो बढ़ जाता है। शिक्षक को छोड़कर समूह में छात्रों की संख्या ज्ञात करें।

A. 22 B. 25 C. 29 D. 34 E. 38

48. वृंदावन हाउसिंग सोसाइटी में मासिक सोसाइटी व्यय निश्चित और एक चर घटक है, जैसे कि चर घटक समाज में सदस्यों की संख्या पर निर्भर करता है। यदि 50 सदस्य हैं, तो प्रत्येक सदस्य को 110 रु और यदि 30 अधिक सदस्य हैं तो प्रत्येक सदस्य को 80 रु का भुगतान करना पड़ता है। यदि प्रत्येक सदस्य 130 रु का भुगतान करता है फिर सोसाइटी में कितने सदस्य हैं?

A. 45

B. 55

C. 40

D. 60

E. इनमें से कोई नहीं।

49. एक क्रिकेट के 40 प्रतिभागियों की औसत आयु 20 वर्ष है। कुछ समय बाद 5 और प्रतिभागी उनसे जुड़े और फिर औसत आयु में 3 वर्ष की वृद्धि हुई। 5 नए प्रतिभागियों की औसत आयु ज्ञात करें।

A. 47 वर्ष

B. 48 वर्ष

C. 50 वर्ष

D. 45 वर्ष

E. 46 वर्ष

50. अपने फुटबॉल करियर में रोनी ने 10 मैचों में औसतन 12 गोल किए। अगर उसने पहले 4 मैचों में औसतन 11 गोल किए हैं और आखिरी 4 मैचों में औसतन 13 गोल किए हैं, तो बाकी 2 मैचों में उसके द्वारा बनाए गए गोलों के औसत का पता लगाएं।

A. 11 गोल

B. 12 गोल

C. 13 गोल

D. 10 गोल

E. 9 गोल

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CORRECT ANSWERS:

1	D	11	A	21	A	31	D	41	A
2	B	12	E	22	C	32	D	42	B
3	C	13	A	23	E	33	B	43	A
4	D	14	D	24	C	34	B	44	D
5	B	15	D	25	B	35	D	45	E
6	E	16	B	26	C	36	E	46	D
7	B	17	E	27	C	37	D	47	A
8	C	18	B	28	B	38	B	48	C
9	B	19	A	29	C	39	B	49	A
10	B	20	E	30	E	40	A	50	B



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Explanations:

1. Let the present age of Abhi's father, Abhi and Sunny be f , a and s respectively.

$$a + 7 = (s + 5) \quad (1.25)$$

$$5s - 4a = 3 \quad \dots(i)$$

Also,

$$\frac{(f - 5) + (a - 5)}{2} = 23$$

$$f + a = 56 \quad \dots\dots(ii)$$

Abhi was 4 years old when Sunny was 1 year old. Difference = $4 - 1 = 3$ years

$$a - s = 3 \quad \dots\dots(iii)$$

Solving (i) and (iii)

$$s = 15 \text{ years}$$

$$a = 18 \text{ years}$$

$$f = 38 \text{ years}$$

Sunny was 10 years old, 5 years ago

So, Abhi's father age 5 years ago was = $38 - 5 = 33$ years

Hence, option D is correct.

2. The total students whose number was multiple of 2 = 25
The total students whose number was multiple of 5 = 10
The total students whose number was multiple of 5 and 2 both i.e. of 10 = 5
The total students whose number was either multiple of 2 or multiple of 5 = $(25 + 10 - 5) = 30$

It means, 30 students were selected and 20 students were not selected

The sum of the weight of all the students = $(56 \times 20 + 58 \times 30)$ kg = 2860 kg

$$\text{The average weight of all the students} = \frac{2860}{50} = 57.2 \text{ kg}$$

Hence, option B is correct.



- 3.** Increase in the average marks of all six = 30%
 Difference between total marks of five students = 20% total marks in second test

For first five students ,

Total marks in second test – Total marks in first test = 20% total marks in second test

Or, Total marks in first in test = 0.8 × Total marks in second test

Hence increase in Total marks of five students is 25%

Let the increase in the marks of 6th student from first test to second = k%

$$30\% = \frac{5 \times 25\% + 1 \times (k\%)}{6}$$

$$K = 55\%$$

Let marks of sixth student in first test = 100p then marks in second test = 155p

Marks in first test miscalculated as 1/9 more, which means (1+1/9) or 10/9 of actual marks

$$100 p = \frac{10}{9} (\text{actual marks})$$

Actual marks = 90p

Final marks = 155p

Actual increase in marks = (155p – 90p) = 65p

$$\text{Increase in percent} = \frac{65p}{90p} = 72.22\%$$

Hence, option C is correct.

- 4.** Let the numbers be “ab” and “xy”

After they are written in reverse numbers will be “ba” and “yx”

As there is a increase of 27 marks in average the total increase in the total marks = 5 × 27 = 135

As rest of the numbers remain same the increase is only in the two numbers

So “ba” + “yx ” – “ab” – “xy” = 135

$$10b + a + 10y + x - (10a + b + 10x + y) = 135$$

$$9(b - a) + 9(y - x) = 135$$

$$(b - a) + (y - x) = 15$$

Hence the sum of difference of the digits of the two numbers is 15

Ratio of incorrect number = 13 : 10

Multiplying both 13 and 10 by number like 5,6,7,8 etc we will get

$$13 \times 7, 10 \times 7 = 91, 70$$

91, 70 as only combination where the sum of difference of digits is 15 (9 – 1 + 7 – 0)

The original numbers are 19 and 07 and their sum = 19 + 7 = 26

Hence, option D is correct.

5. The age of Sania is $(x - 5)$ years

As, **Sania is 7 years older than Geeta**

Geeta's age = $x - 5 - 7 = (x - 12)$ years

Given that,

$$\frac{(x - 5) + 5}{x - 12 - 2} = 5 : 4$$

$$\frac{x}{x - 14} = 5 : 4$$

$$4x = 5x - 70$$

$$x = 70$$

Sania's age = 65 years

Geeta's age = 58 years

Let the age of Bhavna be B years

Given that,

$$\frac{(B - 1)}{65 + 3} = 1 : 4$$

$$4B - 4 = 68$$

Bhavna's age = 18 years

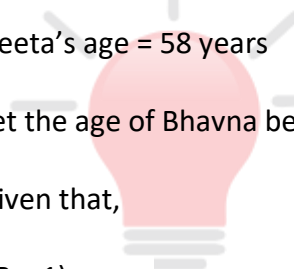
Average age of Sania, Geeta and Bhavna

$$= \frac{65 + 58 + 18}{3} = 47$$

Given that age of Simran is 1 year less than average age of other sisters.

Simran's age = 46 years

Hence, option B is correct.



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6. Sum of weight of P, Q, R and S = $67 \times 4 = 268$ kg

Sum of weight of P, R, S and T = $63 \times 4 = 252$ kg

Let, weight of Q = x kg

Then, weight of T will be $(x - 16)$ kg

Weight of P = $(x - 16 - 18) = (x - 34)$ kg

So, $x - 16 + x - 34 = 58 \times 2$

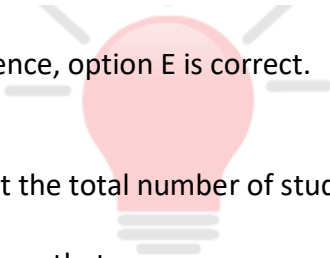
$2x = 116 + 50$

$x = 83$

Therefore, weight of T = $(83 - 16) = 67$ kg

Reqd. average = $\frac{83 + 67}{2} = 75$ kg

Hence, option E is correct.



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7. Let the total number of students sent for the Olympiad be x .

Given that,

$48x = 5 + 7 + 9 + 11 + (x - 4)50$

$2x = 168$

$x = 84$

Hence, option B is the correct answer.

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8. Let the present age of Sonia, Alia and Varun be S, A and V respectively.

$$\text{Given that, } \frac{S + A + V}{3} = \frac{76}{3}$$

$$S + A + V = 76 \dots\dots(i)$$

$$\frac{S + 2}{A + 4} = \frac{9}{7}$$

$$7S = 9A + 22 \dots\dots(ii)$$

$$\frac{A - 3}{V - 4} = \frac{3}{2}$$

$$2A + 6 = 3V \dots\dots(iii)$$

Substituting the values in terms of A in (i)

$$S + A + V = 76$$

$$\rightarrow \frac{9A + 22}{7} + A + \frac{2A + 6}{3} = 76$$

$$\rightarrow 27A + 66 + 21A + 14A + 42 = 76 \times 21$$

$$\rightarrow 62A = 1596 - 108$$

$$\rightarrow A = 24$$

Age of Alia = 24 years

Hence, option C is correct.

9. Total price paid = Rs 312

The original selling price of all three = $312 - 12 = 300$

A profit of 11.11% on all three, $SP = \frac{10}{9} \times CP$

So, cost price of all three = $\frac{9}{10} \times 300 = 270$

Average SP of other two = 75, total CP of other two = 150

CP of gift item = $270 - 150 = 120$

Sold at a profit of 25% $\rightarrow SP = \frac{5}{4} \times 120 = 150$

Sold after a discount of 16.67% $\rightarrow SP = \frac{5}{6} \times MP \rightarrow MP = \frac{6}{5} \times 150 = \text{Rs } 180$

Hence, option B is correct.

10. Let the volume of each glass = 100k, volume of four glasses = $4 \times 100k = 400k$

The volume of water in four glasses = $(30\% + 35\% + 88\% + 99\%) \times 100k = 252k$

All glasses are emptied and refilled to a volume of 60%, total volume of four glasses = $60\% \times 400k = 240k$

Remaining volume of water = $(252k - 240k) = 12k$

$12k = 60\text{ml} \rightarrow k = 5\text{ml}$

Total volume of water in glasses = $240 \times 5\text{ml} = 1200\text{ml}$

Hence, option B is correct.

11. Monday's payment = Rs. x

Tuesday's payment = Rs. $(x + 3y)$

Wednesday's payment = Rs. $(x + 2y)$

Thursday's payment = Rs. $(x + y)$

Friday's payment = Rs. $(x + 2y)$

$$\therefore \text{Reqd. average} = \frac{5x + 8y}{5} = x + \frac{8y}{5}$$

The Question Bank

Hence, option A is correct.

12. Height of 3 boys Bikesh, Sam and Suhas is

$$\frac{208}{3} \times 3 = 208 \text{ inches.}$$

Height of Bikesh, Vihal and Rakesh is

$$\frac{203}{3} \times 3 = 203 \text{ inches.}$$

With the help of this information, the height of 5 boys cannot be determined.

Hence, option (E) is correct.

13. Let, Speed on the fourth day = x

total speed for the first three days = A

& total speed for the last three days = B

Now,

Total speed for the week, $S = 47 \times 7 = 329$

Total speed for the first four days = $A + x = 37 \times 4 = 148$

Total speed for the last four days = $B + x = 52.5 \times 4 = 210$

According to the question,

$$A + x + B = S$$

$$\Rightarrow (A + x) + (B + x) - x = 329$$

$$\Rightarrow 148 + 210 - x = 329$$

$$\Rightarrow x = 358 - 329$$

$$\Rightarrow x = 29 \text{ Km/h}$$

Therefore, time taken to travel 203km = $\frac{203}{29} = 7$ hours

Hence, option A is correct.

14. Let the number of non-officers in office = x

Now, according to question-

$$\Rightarrow 400x + 1040 \times 30 = 500(30 + x)$$

$$\Rightarrow 400x + 1040 \times 30 = 500 \times 30 + 500x$$

$$\Rightarrow 100x = 30(1040 - 500)$$

$$\Rightarrow 100x = 30(540)$$

$$\Rightarrow x = 162$$

$$\text{Reqd. average} = \frac{30 + 162}{2} = 96$$

Hence, option D is correct.

15. Number of applicants that have been counted extra = $1857 - 1747 = 110$

Hence, decrease in average = $\frac{110}{200} = 0.495$

$$\therefore \text{Correct average} = 1560 - 0.495 = 1559.505 = 1559.51$$

Hence, option D is correct.

16. Let 13th number is X.

$$\text{Sum of fifteen numbers} = 54 \times 15 = 810$$

$$X + (X + 15) + (X + 18) = 810 - 126 - (46 \times 6) = 408$$

$$\Rightarrow 3X + 33 = 375$$

$$\Rightarrow X = 125$$

$$\therefore \text{14th number} = 125 + 15 = 140$$

Hence, option B is correct.

17. Let the average weight of all five = 100k
So, weight of A = 90k, B = 112k and C = 94k

Let the weight of D = d and that of E = e

$$\frac{90k + 112k + 94k + d + e}{5} = 100k$$

$$d + e = 204k$$

$$d : e = 6 : 11 \rightarrow d = \frac{6}{17} \times 204 = 72k \rightarrow e = 132k$$

$$\text{Difference} = 132k - 72k = 60k$$

$$60k = 75$$

$$\text{So, } k = \frac{75}{60} = 1.25$$

$$\text{Average weight of all the five persons} = 100 * 1.25 = 125\text{kg}$$

Hence, option E is correct.

18. Total marks obtained by 17 girls = $35 \times 17 = 595$

Let the marks obtained by 17 girls be (in ascending order) be:

$(a - 8d), (a - 7d), (a - 6d), (a - 5d), (a - 4d), (a - 3d), (a - 2d), (a - d), (a), (a + d), (a + 2d), (a + 3d), (a + 4d), (a + 5d), (a + 6d), (a + 7d), (a + 8d)$

$$A = 35$$

Sum of 2nd, 6th, 9th, 12th and 16th term = $5a = 175$

$$\text{New average} = \frac{595 - 175}{12} = \frac{420}{12} = 35$$

Hence, option B is correct.

- 19.** Let the sum of the marks of the unchanged 5 students from initial tally be equal to 'x', such that,

$$\frac{x + 43 + 68 + 51}{8} = 48 \text{ (Given)}$$

Then,

$$x = 384 - (43 + 68 + 51) = 384 - 162 = 222$$

With adding of a new student marks,

$$\text{Sum of marks of 6 students becomes} = x + 84 = 222 + 84 = 306$$

$$\text{New Average} = \frac{306}{6} = 51$$

$$\text{Percentage increase in average} = \frac{51 - 48}{48} \times 100$$

$$= \frac{300}{48} = \frac{100}{16} = 6.25\%$$

Hence, option A is correct.

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- 20.** Total employees in the company = 40

Average age of employees = 35

Total age of employees = $(40 \times 35) = 1400$

In next two years,

Total remaining employees = $40 - 10 = 30$

Retirement age = 60 years

Total age of 30 employees after 2 years = $1400 + (40 \times 2) - (60 \times 10)$

= $1400 + 80 - 600 = 880$

\therefore Average age after two years = $\frac{880}{30} = \frac{88}{3}$ years

Hence, option E is correct.

21. Let the amount paid by each of Rajiv's friend be Rs x

Total amount paid by them in all = Rs. $(145 + 12x)$

Average amount that should have been paid by Rajiv's friends = $5 + x$

$$\frac{145 + 12x}{13} = (x + 5)$$

$x = 80$

Hence, option A is correct.

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22. Let the present age of father, mother and three children's be F, M, C1, C2 and C3.

When the first child was born, the age of the first child was 0.

Average = 16 sum of their age = $16 \times 3 = 48$

After n_1 years, second child was born, the age of first child will be n_1 years and age of second child be 0.

Average = 15.75, sum of their age = $15.75 \times 4 = 63$

Difference between the sum of their age after n_1 years = $63 - 48 = 15$

$$3n_1 = 15$$

$$n_1 = 5$$

After n_2 years, third child was born, the age of first child get increased by n_2 years, age of second child will be n_2 years, age of third child is 0.

Average = 14.2, sum of their age = $14.2 \times 5 = 71$

Difference between the sum of their age after n_2 years = $71 - 63 = 8$

$$4n_2 = 8$$

$$n_2 = 2$$

After n_3 years, average is 15.2 years, sum of their age = $15.2 \times 5 = 76$

Difference between the sum of their age after n_3 years = $76 - 71 = 5$

$$5n_3 = 5$$

$$n_3 = 1$$

First child was born $1 + 2 + 5 = 8$ years ago.
So the age of the first child is 8 years.

Hence, option C is correct.

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23. Average of Eight numbers is 75

Total of Eight Numbers = $75 \times 8 = 600$

Highest and Lowest Score removed, Average = 80

Total Remaining Six Numbers = $80 \times 6 = 480$

Sum of Highest and Lowest Number = 120

Ratio of Lowest and Highest Number is 1 : 3.

$$\text{Highest Number} = \frac{3}{4} \times 120 = 90$$

$$\text{Reqd. \%} = \frac{90}{600} \times 100 = 15\%$$

Hence, option E is correct.

24. Let the number of boys = x and the number of girls = y then

$$250x + 100y = 160(x + y)$$

$$90x = 60y$$

$$x : y = 2 : 3$$

$$\text{The reqd. \%} = \frac{2 \times 100}{5} = 40\%$$

Hence, option C is correct.

25. Let the number of boys = x and the number of girls = y

The total number of chocolates the boys have = $240x$

The total number of chocolates the girls have = $180y$

If each of the boys eat 10 chocolates then the remaining number of chocolates, the boys will have = $240x - 10x = 230x$

The sum of the all the chocolates = $200(x + y) = 230x + 180y$

$$20y = 30x$$

$$: y = 2 : 3$$

$$\text{The reqd. percentage} = \frac{2 \times 100}{5} = 40\%$$

Hence, option B is correct.

26. Let the total bonus be $100x$

Total members = n

$$20x = \frac{4(80x)}{n-1}$$

$$n = 17$$

Hence, option C is correct.

27. Sum of 15 numbers = 15×26

When each number is multiplied by 6 then the sum will become = $15 \times 26 \times 6$

Now, when each number is increased by 6 then sum = $15 \times 26 \times 6 + 15 \times 6$

$$\text{Reqd. average} = \frac{15 (26 \times 6 + 6)}{15} = 26 \times 6 + 6 = 162$$

Hence, option C is correct.

28. Total Expenditure of Vivek from June to November = Rs. $8550 \times 6 =$ Rs. 51300

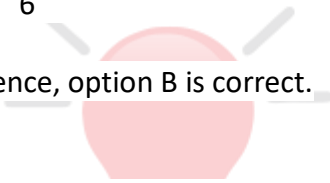
Total Expenditure of Vivek from July to November = Rs. $(51300 - 1850) =$ Rs. 49450

Total Expenditure of Vivek for the July to December = Rs. $(49450 + 2420) =$ Rs. 51870

Hence, the average expenditure for the months of July to December

$$= \frac{51870}{6} = \text{Rs. } 8645$$

Hence, option B is correct.



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29. Let the average weight of 10 persons is x kg

Then the sum of the weight of 10 persons = $10x$ kg

Let the Ram's weight is R and Sohan's weight is S then

Case I: When Ram comes in place of Mohan

$$10x - 55 + R = 10(x + 2.5)$$

$$R = 10 \times 2.5 + 55 = 25 + 55 = 80 \text{ kg}$$

Case II: When Sohan comes in place of Mohan

$$10x - 55 + S = 10(x + 3.5)$$

$$S = 35 + 55 = 90 \text{ kg}$$

The average weight of Ram, Mohan, and Sohan

$$= \frac{80 + 55 + 90}{3} = \frac{225}{3} = 75 \text{ kg}$$

Hence, option C is correct.

30. Let the number of members in the family = x

Total age of the family = $x \times 35$ years

After 10 year, the sum of the age will become = $35x + 10x = 45x$

When twins were born, the number of members in the family = $x + 2$ and the sum of the age of the family = $(x + 2) \times 36 = 36x + 72$ years

$$45x = 36x + 72$$

$$9x = 72$$

$$x = 8 \text{ (Total how many members is in the family except twins)}$$

Hence, option E is correct.

- 31.** Let the price of one pen = Rs. x and the price of one pencil = Rs. y

$$\text{Then, } 5x + 15y = 8.5 \times 20 = 170 \text{ ----- (i)}$$

$$4x - 7y = 3 \text{ ----- (ii)}$$

Solve equation (i) and (ii)

$$x = 13 \text{ and } y = 7$$

$$\text{The price of 7 pens and 5 pencils} = \text{Rs. } (7 \times 13 + 5 \times 7) = \text{Rs. } (91 + 35) = \text{Rs. } 126$$

$$\text{The reqd. average} = \frac{126}{12} = \text{Rs. } 10.5$$

Hence, option D is correct.

- 32.** Sum of the heights of the first six students = $170 \times 6 = 1020$ cm
Sum of the heights of the last eight students = $175 \times 8 = 1400$ cm

$$\text{Sum of the heights of the total 16 students} = 180 \times 16 = 2880$$

$$\text{Sum of the height of the left 2 students} = 2880 - 1020 - 1400 = 460$$

$$\text{Average height of the left 2 students} = \frac{460}{2} = 230 \text{ cm}$$

Hence, option D is correct.

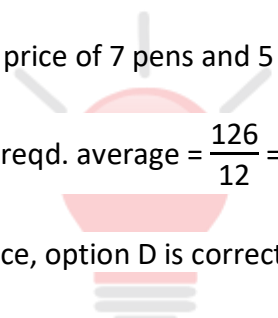
- 33.** Total salary of trainees = $16 \times 708.75 = \text{Rs. } 11,340$

Let there be x trainees.

$$\therefore \text{Total salary} = \text{Rs. } (90x) \text{ and salary of remaining trainees} = \text{Rs. } [75(x - 16)]$$

$$\therefore 90x = 11340 + 75x - 1200$$

$$\therefore 15x = 10140 \text{ i.e. } x = 676$$



Hence, option B is correct.

34. Man days for which food is available = $200 \times 50 = 10000$

Available food is enough for 1 student for 10000 days

Food used by 200 students in 10 days = 200×10 man days of food = 2000

Man days of food left = $10000 - 2000 = 8000$ man days of food

Total number of students now = $200 + 50 = 250$

Remaining food can be used for 250 students for

$$= \frac{8000}{250} \text{ days} = 32 \text{ days}$$

Hence, option B is correct.

35. Total weight of friends P, Q, R, S and T = $(x + 6) \times 5 = 5(x + 6)$ kg

So, total weight of P, Q and S = $5(x + 6) - 2(x - 6) = (3x + 42) = 3(x + 14)$

Weight of U = $(x + 6 - 5) \times 6 - 5(x + 6) = 6(x + 1) - 5(x + 6) = (x - 24)$ kg

According to the question,

$$[3(x + 14) + (x - 24)] = 94.5 \times 4$$

$$4x + 18 = 378$$

$$4x = 360; x = 90$$

Hence, option D is correct.

36. Sum of the ages of the 15 students in the class = $24 \times 15 = 360$ years

Sum of the ages of 15 students along with class teacher and principal = $26 \times 17 = 442$ years

Sum of the ages of the class teacher and the principal = $(442 - 360)$ years = 82 years

So, the age of the class teacher

$$= \text{either } \frac{82 + 18}{18} \text{ or } \frac{82 - 18}{2} = \text{either 50 years or 32 years}$$

Exact age of the class teacher cannot be determined.

Hence, option E is correct.

37. Salary of Gaurav = 166.67 % Salary of Aman

$$\frac{\text{Salary of Gaurav}}{\text{Salary of Aman}} = \frac{5}{3}$$

Let salary of Gaurav and Aman be 5k and 3k

The ratio of the months for Aman and Gaurav = $x : y = 5 : 4$

Let x and y be 5p and 4p

Total amount = $2 \times 126000 = \text{Rs. } 252000$

$$(5k \times 4p + 3k \times 5p) = 252000$$

$$35kp = 252000 \rightarrow kp = 7200$$

Difference of total amount = $(5k \times 4p - 3k \times 5p) = 5kp = 5 \times 7200 = 36000$

Hence, option D is correct.

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38. Let the original amount with A, B and C be Rs. a, Rs. b, and Rs. c respectively

The money with each of the three after distribution = Rs. 480

So, the total amount of money with all three = $3 \times 480 = \text{Rs. } 1440$

The amount with A becomes 75% of the initial amount $\rightarrow 480 = 75\% (a)$

$$a = \frac{4}{3} \times 480 = 640$$

The amount with C becomes 500/7% more than initial amount $\rightarrow 480$

$$= \frac{12}{7} \times (c) \rightarrow c = \frac{7}{12} \times 480 = 280$$

The original amount with A = Rs. 640 and that with C = Rs. 280

Required difference = Rs. (640 – 280) = Rs. 360

Hence, option B is correct.

39. In 2011, let the weight of Varun, Rahul and Priyanka be 6k, 5k and 7k

In 2016 weight of Varun became 150% ; weight of Rahul became 160% and the weight of Priyanka increased by 400/7 %

$$\text{So, new weight of Varun} = \frac{150}{100} \times 6k = 9k$$

$$\text{Weight of Rahul} = \frac{160}{100} \times 5k = 8k$$

$$\text{Weight of Priyanka} = \frac{1000/7}{100} \times 7k = 10k$$

Year	Varun	Rahul	Priyanka
2011	6k	5k	7k
2016	9k	8k	10k

There is a change of 3k in the weight of each of them. So the change in average weight will also be 3k.
 $3k = 7.2k \rightarrow k = 2.4 \text{ kg}$

Difference between weight of varun in 2016 and weight of Priyanka in 2011 = $9k - 7k = 2k$

$$2k = 2 \times 2.4 = 4.8 \text{ kg}$$

Hence, option B is correct.

40. Ratio of recorded weight A : B : C = 13 : 6 : 5

Let the recorded weight be A, B and C be 13k, 6k and 5k

The average weight of all three

$$= \frac{13k + 6k + 5k}{3} = \frac{24k}{3} = 8k$$

$$8k = 56 \rightarrow k = 7$$

Weight of A = 13k which is 44.44% (4/9) more than original. So, original weight

$$= \frac{9}{13} \times 13k = 9k$$

Weight of B = 6k, which is 14.28% (1/7) less than original.

$$\text{So, original weight} = \frac{7}{6} \times 6k = 7k$$

Weight of C = 5k, which is 33 kg more than the original. So, original weight = 5k – 33

$$\text{Original total weight of all three} = (9k + 7k + 5k - 33) = 21k - 33 = 21 \times 7 - 33 = 114$$

$$\text{Original average weight of all three} = \frac{114}{3} = 38 \text{ kg}$$

Hence, option A is correct.

- 41.** Sunday + Monday + Tuesday + Wednesday = 4 × 34 = 136°C
Wednesday + Thursday + Friday + Saturday = 4 × 38 = 152°C
Sunday + Monday + Tuesday + Wednesday + Thursday + Friday + Saturday = 7 × 36 = 252°C
Wednesday = (136 + 152 – 252)°C = 36°C

Hence, option A is correct.

- 42.** Sum of the actual weights of all the students in the class = 65 × 32 – 30 – 36 + 26 + 42
= 2080 – 66 + 68 = 2082

$$\text{Actual average weight of 65 students of the class} = \frac{2082}{65} = 32.03 \text{ kg}$$

Hence, option (B) is correct.

- 43.** Sum of the ages of 45 students = (45 × 40) Kg = 1800 Kg

$$\text{Sum of the ages of 47 students} = (47 \times 39) \text{ Kg} = 1833 \text{ Kg}$$

$$\text{Sum of the ages of two new students} = (1833 - 1800) \text{ Kg} = 33 \text{ kg}$$

$$\text{Average weight of the two new students} = \frac{33}{2} \text{ Kg} = 16.5 \text{ Kg}$$

Hence, option A is correct.

44. Average of n consecutive even/odd numbers

$$\Rightarrow a = \text{first number} + (n - 1)$$

$$\Rightarrow 48 = \text{first number} + (5 - 1)$$

$$\Rightarrow \text{first number} = 44$$

Even numbers are: 44, 46, 48, 50, 52

And

$$a = \text{first number} + (n - 1)$$

$$\Rightarrow 49 = \text{first number} + (5 - 1)$$

$$\Rightarrow \text{first number} = 45$$

Odd numbers are: 45, 47, 49, 51, 53

Required product = $44 \times 53 = 2332$

Hence, option (D) is correct.

45. The average age of 30 friends = 34 years

Sum of the ages of 30 friends = $34 \times 30 = 1020$ years

The average age of the first 10 friends = 31 years

Sum of the ages of the first 10 friends = $31 \times 10 = 310$ years

The average age of the last 18 friends = 33 years

Sum of the ages of the last 18 friends = $33 \times 18 = 594$ years

Now the sum of the ages of the 11th and 12th friend = $(1020 - 310 - 594) = 116$

$$\text{Average of the age of 11th and 12th friend} = \frac{116}{2} = 58 \text{ years}$$

Hence, option E is correct.

46. Since the terms are consecutive even integers, they will be of the form $a, a + 2, a + 4$, etc.

Let the middle term (sixth term) be a and all the terms be:

$a - 10, a - 8, a - 6, a - 4, a - 2, a, a + 2, a + 4, a + 6, a + 8$, and $a + 10$.

\therefore The average of all the 11 terms is $(a - 10 + a - 8 + a - 6 + a - 4 + a - 2 + a + a + 2 + a + 4 + a + 6 + a + 8 + a + 10)/11 = a$.

Now, the second term is $a - 8$, and the seventh term is $a + 2$.

$$\therefore \text{Their average} = \frac{2a - 6}{2} = a - 3$$

$$\therefore a - 3 = 15$$

$$\therefore a = 18$$

\therefore The average of all the term is 18.

Hence, option D is correct.

47. Total weight of the group = $(x - 4) \times (x + 5)$ kg

Weight of class teacher = 54 kg

According to the question,

$$\frac{\{(x - 4)(x + 5) + 54\}}{\{(x - 4) + 1\}} = (x + 5) + 1$$

$$\{(x - 4)(x + 5) + 54\} = (x + 5)(x - 4) + (x - 4) + (x + 5) + 1$$

$$54 = 2x + 2$$

$$2x = 52 ; x = \frac{52}{2} = 26$$

So, strength of the group = $26 - 4 = 22$

Hence, option A is correct.

48. It is given that, expenditure = $F + V$

From the condition given we can say that,

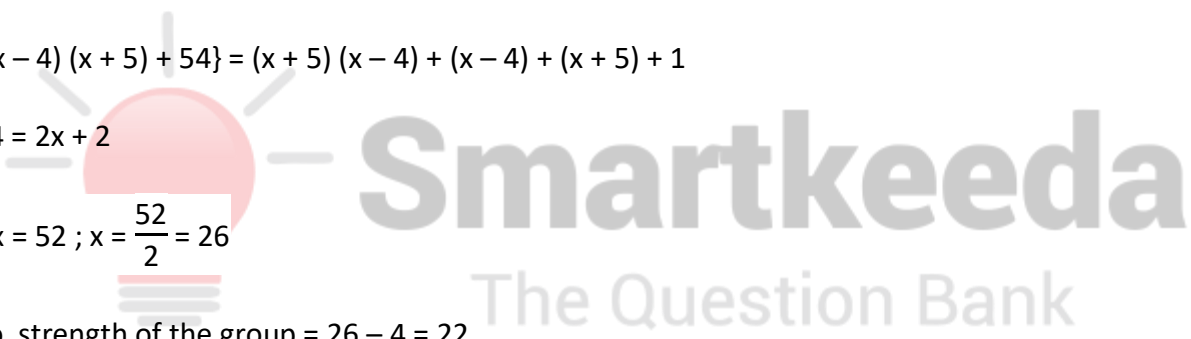
$$(110)(50) = F + 50k \quad \dots(i)$$

$$(80)(80) = F + 80k \quad \dots(ii)$$

On solving (i) and (ii) we get,

$$F = 4000 \text{ and } k = 30$$

Now,



$130x = 4000 + 30x$, where x is the number of members

$$\therefore x = 40$$

Hence, option C is correct.

49. Total age of the 40 participants = $40 \times 20 = 800$

Total age of the 45 participants = $45 \times 23 = 1035$

Total age of the 5 new participants = $1035 - 800 = 235$

Average age of the 5 new participants

$$= \frac{235}{5} = 47 \text{ years}$$

Hence, option A is correct.

50. Ronny scored 12 average goals in 10 matches.

Sum of the number of goals in 10 matches = $12 \times 10 = 120$ goals

Sum of the number of goals in the first 4 matches = $11 \times 4 = 44$ goals

Sum of the number of goals in the last 4 matches = $13 \times 4 = 52$ goals

Sum of the number of goals in the remaining 2 matches = $120 - 44 - 52 = 24$

$$\text{Reqd. average} = \frac{24}{2} = 12 \text{ goals}$$

Hence, option B is correct.



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