

## CLASS WORK

**Directions for Q1 to Q3:** At the end of a soccer season, every player had a prime number of goals and the average of the 11 players was also a prime number. No player's individual tally was the same as of anyone else's or as the average. Nobody has scored more than 45 goals.

1. What was the average of their goals scored?  
(a) 28      (b) 23      (c) 29      (d) 31
2. What was the maximum goals scored by a single person?  
(a) 43      (b) 38      (c) 27      (d) 34
3. What was the minimum number of goals scored by a single person?  
(a) 6      (b) 4      (c) 5      (d) 9
4. In a cricket team, the average age of eleven players is 28 years. Out of these, the average ages of three groups of three players each are 25 years, 28 years, and 30 years respectively. If in these groups, the captain and the youngest player are not included and the captain is eleven years older than the youngest player, what is the age of the captain?  
(a) 35      (b) 28      (c) 21      (d) 30
5. The average weight of 3 men A, B and C is 84 Kg. Another man D joins the group and the average now becomes 80 Kg. If another man E whose weight is 3 Kg more than that of D replaces A, then the average weight of B, C, D and E becomes 79 Kg. The weight of A is  
(a) 85      (b) 80      (c) 75      (d) 72
6. A man whose bowling average is 12.4, takes 5 wickets for 26 runs and thereby decreases his average by 0.4. The number of wickets taken by him before his last match was  
(a) 96      (b) 85      (c) 83      (d) 95
7. A man spends Rs.750 on an average during the first 8 months. During the next 4 months, he spends Rs.680 per month. He took a loan of Rs.320 during the year and paid Rs.600 for LIC premium. Find his monthly average income  
(a) Rs.650      (b) Rs.750      (c) Rs.850      (d) Rs.900
8. There are 27 students in a class whose average weight is 36kg. Among these 27 students, 15 are boys and 12 are girls. The average weight of 15 boys is 6.75 kg more than the average weight of 12 girls. What is the average weight of 12 girls (in kg)?  
(a) 41.25      (b) 37.50      (c) 26.65      (d) 32.25
9. Stan was asked to calculate the arithmetic mean of ten positive integers each of which has two digits. By mistake he interchanged the digits of one of these ten numbers. As a result his answer was 1.8 more than what it should have

been. The difference between the digits of the number that was wrongly used is

- (a) 1      (b) 2  
(c) 3      (d) Cannot be determined
10. The average of four positive numbers is A. The average of all possible triplets formed out of the four positive numbers is B. Which of the following is true regarding A and B?  
(a)  $A = B$       (b)  $A < B$   
(c)  $A > B$       (d) None of these
11. A sequence of seven consecutive integers is given. The average of the first five integers is n. The average of all the seven integers is  
(a) n  
(b)  $n + 1$   
(c)  $n + 2$   
(d)  $Kn$ , where K is a function of n
12. A certain factory employed 600 men and 400 women and the average wage was Rs.2.55 per day. If a woman gets 50 paise less than a man, what were their daily wages?  
(a) Man Rs.2.75, Woman Rs.2.25  
(b) Man Rs.3.25, Woman Rs.2.75  
(c) Man Rs.3, Woman Rs.2.50  
(d) Man Rs.2.50, Woman Rs.2
13. The average of five different positive numbers is 25. x is the decrease in the average when the smallest number among them is replaced with 0. What can be said about x?  
(a)  $x < 5$       (b)  $x > 5$   
(c)  $x = 5$       (d) None of these
14. The average of 20 numbers is zero. Of them, at the most, how many may be greater than zero?  
(a) 20      (b) 11      (c) 10      (d) 19
15. The average weight of the students in four sections A, B, C and D is 60 kg. The average weight of the students of A, B, C and D individually are 45 kg, 50 kg, 72 kg, and 80 kg respectively. If the average weight of the students of section A and B together is 48 kg and that of B and C together is 60 kg, what is the ratio of the number of the students in sections A and D?  
(a) 3:2      (b) 8:5      (c) 12:7      (d) 4:3
16. Natural numbers 1 to 25 (both inclusive) are split into 5 groups of 5 numbers each. The medians of these 5 groups are A, B, C, D and E. If the average of these medians is m, what are the smallest and the largest values m can take?  
(a) 8, 16      (b) 10, 18      (c) 9, 17      (d) 7, 15

## AVERAGES

17. Consider a class of 40 students whose average weight is 40 kg. 'm' new students join this class whose average weight is 'n' kg. If it is known that  $m + n = 50$ , what is the maximum possible average weight of the class now?  
(a) 40.18 kg (b) 40.56 kg  
(c) 40.67 kg (d) 40.49 kg
18. Visitors to a show were charged Rs.15.00 each on the first day, Rs.7.50 on the second day and Rs.2.50 on the third day. The total attendance for the three days was in the ratio 2:5:13 respectively. Find the average charge per person for the whole show.  
(a) Rs.7 (b) Rs.5 (c) Rs.9 (d) Rs.11
19. There were 35 students in a hostel. If the number of students is increased by 7, the expenses of the mess were increased by Rs.42 per day, while the average expenditure per head diminished by Re.1. The original expenditure of the mess was  
(a) Rs.400 (b) Rs.420  
(c) Rs.432 (d) Rs.442
20. The average age of 4 players is 18.5 years. If the age of the coach is also included, the average age increases by 20 %. The age of coach is  
(a) 28 years (b) 31 years  
(c) 34 years (d) 37 years.
5. A certain number of trucks were required to transport 60 tonnes of steel wire from the TISCO factory in Jamshedpur. However it was found that since each truck could take 0.5 tonnes of cargo less, another four trucks were needed. How many trucks were initially planned to be used?  
(a) 10 (b) 20 (c) 30 (d) 25
6. Ten years ago, the average age of a family of 4 members was 24 years. Two children having been born, the average age of the family is the same today. What is the present age of the youngest child if the two children differ in age by two years?  
(a) 1 year (b) 2 years (c) 3 years (d) 5 years
7. The average age of A and B is 20 years. If C were to replace A, the average would be 19 and if C were to replace B, the average would be 21. What are the ages of A, B and C respectively?  
(a) 22, 18, 20 (b) 18, 22, 20  
(c) 22, 20, 18 (d) 18, 20, 22
8. The average expenditure of a man for the first five months is Rs.120, and for the next seven months is Rs.130. If he saves Rs.290 in that year, his monthly average income is  
(a) Rs.140 (b) Rs.150 (c) Rs.160 (d) Rs.170
9. The average salary per head of all the workers in a workshop is Rs.850. If the average salary per head of 7 technicians is Rs.1000 and the average salary of the others is Rs.780, find the total number of workers in the workshop.  
(a) 28 (b) 24 (c) 26 (d) 22
10. A fruit man has a sale of Rs.6000, Rs.5000, Rs.4000 and Rs.2000 for 4 consecutive months. How much should he have in the fifth month so that he gets an average sale of Rs.3600?  
(a) Rs.1000 (b) Rs.2000 (c) Rs.3500 (d) Rs.4000

### HOME ASSIGNMENT

1. There are 30 consecutive numbers. What is the difference between the average of the first 10 and that of the last 10 numbers?  
(a) 30 (b) 20 (c) 25 (d) 35
2. The average of eight numbers is 20. The average of first two numbers is 15.5 and that of next three numbers is  $64/3$ . If the 6<sup>th</sup> number be less than the seventh and eight number by 4 and 7 respectively, then find the eighth number.  
(a) 28 (b) 25 (c) 29 (d) 31
3. The average monthly income of P and Q is Rs.5050. The average monthly income of Q and R is Rs.6250 and the average monthly income of P and R is Rs.5200. The monthly income of P is  
(a) Rs.3500 (b) Rs.4000 (c) Rs.4500 (d) Rs.5000
4. A team of miners planned to mine 1800 tonnes of ore during a certain number of days. Due to technical problems, in one-third of the planned number of days, the team was able to achieve an output of 20 tonnes of ore less than the planned output. To make up for this, the team overachieved for the rest of the days by 20 tonnes. The end result was that the team completed the task one day ahead of time. How many tonnes of ore did the team initially plan to mine a day?  
(a) 50 (b) 80 (c) 100 (d) 120

### ANSWER KEY

1. (b) 2. (b) 3. (b) 4. (c) 5. (b)  
6. (c) 7. (a) 8. (b) 9. (d) 10. (a)