Arithmetic - 06

Career Launcher

QA

CEX-Q-0210/25

Topics Covered

- Averages and Alligation - 02; Median, Mode

Number of Questions : 20

1. A merchant has 100 kg of sugar, a part of which he sells at 7% profit and the rest at 17% profit. He gains 10% on the whole. How much is sold at 17% profit?
(1) 70 kg (2) 50 kg
(3) 35 kg (4) 30 kg

2. A trader marked the price of his goods 20% more than that of the cost price. He then sells 1/4 of his stock at a discount of 10%, and half of the stock at the marked price, and the rest at a discount of 25%. Find his gain percentage.
(1) 18% (2) 9.5%
(3) 12% (4) 2.25%

3. The class teachers of three classes X, Y and Z give an algebra test to their respective students. The average scores in class X, Y and Z are 83, 76 and 85 respectively. The average score of all students in classes X and Y together is 79 and the average score of all students in classes Y and Z together is 81. What is the average for all the three classes?
(1) 81 (2) 81.5
(3) 82 (4) 84.5

4. In an apartment complex, the number of people aged 51 years and above is 30 and there are at most 39 people whose ages are below 51 years. The average age of all the people in the apartment complex is 38 years. What is the largest possible average age, in years, of the people whose ages are below 51 years?
(1) 26 (2) 25
(3) 28 (4) 27

5. A cricket team has 11 players and each of them has played 20 matches till date. Virat, Rohit, Mahendra, Rahul and Shikhar have scored runs at an average of 60, 55, 50, 45 and 40 respectively. Rest of the players have scored at an average of 25 each. In the next 10 matches, Virat and Rohit each scored 900 runs whereas Mahendra scored twice that of Rahul. After 30 matches, if Virat's new average score is twice that of Rahul, what is the approximate average score of Mahendra?
(1) 49 (2) 41
(3) 43 (4) 45

6. A batsman played n + 2 innings and got out on all occasions. His average score in these n + 2 innings was 29 runs and he scored 38 and 15 runs in the last two innings. The batsman scored less than 38 runs in each of the first n innings. In these n innings, his average score was 30 runs and lowest score was x runs. The smallest possible value of x is
(1) 1 (2) 2
(3) 4 (4) 3

7. The average weight of students in a class increases by 600 gm when some new students join the class. If the average weight of the new students is 3 kg more than the average weight of the original students, then the ratio of the number of original students to the number of new students is
(1) 1 : 2 (2) 1 : 4
(3) 3 : 1 (4) 4 : 1

8. In an examination, the average marks of students in sections A and B are 32 and 60, respectively. The number of students in section A is 10 less than that in section B. If the average marks of all the students across both the sections combined is an integer, then the difference between the maximum and minimum possible number of students in section A is

9. Rajiv is a student in a business school. After every test he calculates his cumulative average. QT and OB were his last two tests.83 marks in QT increased his average by 2. 75 marks in OB further increased his average by 1. Reasoning is the next test, if he gets 51 in Reasoning, his average will be ___?
(1) 59 (2) 60
(3) 61 (4) 63

10. *Prof. Bee* noticed something peculiar while entering the quiz marks of his five students into a spreadsheet. The spreadsheet was programmed to calculate the average after each score was entered. Prof. Bee entered the marks in a random order and noticed that after each mark was entered, the average was always an integer. In ascending order, the marks of the students were 71, 76, 80, 82 and 91. What were the fourth and fifth marks *Prof. Bee* entered?
(1) 71 and 82 (2) 71 and 76
(3) 71 and 80 (4) 76 and 80

11. The average weight of a class of 100 students is 45 kg. The class consists of two sections, A and B, each with 50 students. The average weight W_1 of Section A is 1 kg less than the average weight W_2 of Section B. If Deepak, the heaviest student of section B, is moved to Section A, and Poonam, the lightest student of Section A, is moved to Section B, then the average weights of the two sections are interchanged. What is the weight of Poonam if it is known that movement of Deepak from Section B to A (without moving Poonam) makes the average weights of the two sections equal?
(1) 70 kg (2) 15 kg
(3) 20 kg (4) 25 kg

12. A set of consecutive positive integers beginning with 1 is written on the blackboard. A student came along and erased one number. The average of the remaining numbers is $35\frac{7}{17}$. What was the erased number?
(1) 7 (2) 8
(3) 9 (4) None of these

13. If the sum of 6 consecutive odd integers is 888, then the median of this series is
(1) 147 (2) 148
(3) 149 (4) 151

14. The table below shows the temperatures in degrees

Noon time Temperature						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
66	78	75	69	78	77	70

If 'm' represents the median temperature, 'f' represents the temperature that occurs most often and 'a' represents the average (arithmetic mean) of the seven temperatures, which of the following is the correct order of m, f and a?
(1) a < m > f (2) a < m < f
(3) m < a < f (4) m < f < a

15. The mean of 50 numbers is 30. Later, it was discovered that two entries were wrongly entered as 82 and 13 instead of 28 and 31. Find the correct mean.
(1) 36.12 (2) 30.66
(3) 29.28 (4) 38.21

16. 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?
(1) 4.5 (2) 4
(3) 5 (4) 3.5

17. In a group of 10 students, the mean of the lowest 9 scores is 42 while the mean of the highest 9 scores is 47. For the entire group of 10 students, the maximum possible mean exceeds the minimum possible mean by
(1) 3 (2) 6
(3) 5 (4) 4

18. Consider six distinct natural numbers such that the average of the two smallest numbers is 14, and the average of the two largest numbers is 28. Then, the maximum possible value of the average of these six numbers is
(1) 24 (2) 23.5
(3) 22.5 (4) 23

19. In a list of 7 integers, one integer, as x is unknown. The other six integers are 20, 4, 10, 4, 8 and 4. If the mean, median, and mode of these seven integers are arranged in increasing order, they form an arithmetic progression. The sum of all possible values of x is
(1) 32 (2) 34
(3) 38 (4) 40

20. The arithmetic mean of scores of 25 students in an examination is 50. Five of these students top the examination with the same score. If the scores of the other students are distinct integers with the lowest being 30, then the maximum possible score of the toppers is