EXERCISE – 2.3

Select the correct alternative out of the given ones:

 The number of children in 25 families of a locality are recorded as follows: 3, 1, 4, 0, 2, 1, 1, 2, 3, 3, 2, 2, 2, 5, 0, 1, 4, 1, 2, 1, 2, 3, 0, 1, 4

The mean number of children per family is:

(A)

2

4

3

5

- (B)
- (C)
- (D)
- 2) If $\overline{x} = \left(\sum_{i=1}^{n} \chi_i \ln\right)$, then the value of
 - $\sum_{i=1}^{n} \left(x_i \overline{x} \right) \text{ is:}$
 - (A) 0
 - (B) 2 x
 - (C) $n\overline{x}$
 - (D) None of these
- 3) The mean of 12 numbers is 24. if 5 is added in very numb E.R., the new mean outstanding:
 - (A) 25
 - (B) 29
 - (C) 84
 - (D) None of these
- 4) The mean of 5 numbers is 27. If one is excluded, their mean is 25. the excluded number is:
 - (A) 25
 - (B) 45
 - (C) 35
 - (D) None of these
- 5) If the mean of the set of numbers $x_1 x_2$, x_n is \overline{x} , then the mean of the numbers $x_1 + 2i$, $1 \le i \le n$ is:
 - (A) $\bar{x} + 2n$
 - (B) $\frac{1}{x} + n + 1$
 - (C) +2
 - (D) +n
 - 6) The A.M. of n numbers of a series is X
 . If the sum of first (n-1) terms is k, then the nth number is:
 - (A) X -k

- (B) n X -k
- (C) \overline{X} -nk
- (D) $n\overline{X}$ -nk
- 7) The mean of 68 numbers is 18. if each number is divided by 6, the new mean is:
- (A) 4
- (B) 18
- (C) 3
- (D) None of these
- The arithmetic mean of the marks obtained by 10 students of class Y in Mathematics in a certain examination is 30. the marks obtained are 25, 30, 21, 55, 47, 10, 15 x, 45, 35. the value of x is:
- (A) 15
- (B) 16
- (C) 17
- (D) None of these
- 9) If a variate X is expressed as a linear functions of two variates U and V in the form X = aU + bV, then mean \overline{X} of X is:
- (A) $a\overline{U} + b\overline{V}$
- (B) $\overline{U} + \overline{V}$
- (C) $b\overline{U} + a\overline{U}$
- (D) None of these
- 10) Mean of 25 observations was found that 96 was misread as 69. the correct mean is:
- (A) 79.38
- (B) 79.4
- (C) 79.48
- (D) None of these
- 11) There are 60 students in a class of which25 are girls. The average weight of 25 girlsis 40 kg and that of 35 boys is 53 kg. themean weight in kg of the entire class is:
 - (A) 47.59
 - (B) 47.49
 - (C) 47.7
 - (D) None of these
 - 12) The weighted A.M of first n natural numbers whose weights are equal to the corresponding numbers is equal to
 - (A) 2n + 1
 - (B) (1/2) (2n + 1)
 - (C) (1/3) (2n + 1)

- (D) 2n + 1/6
- 13) The mean of 30 values was 150. It was detected on rechecking that one value 165 was wrongly copied as 135 for the computation of mean. The correct mean is:
- (A) 161
- (B) 151
- (C) 141
- (D) None of these
- 14) The sum of deviation of a set of values x_1, x_2, \dots, x_n measured form 50 is 10 and the sum of deviation of values from 46 is 70. the values of n and the mean are:
- (A) 20, 49.5
- (B) 20, 49
- (C) 21, 39.5
- (D) None of these
- 15) The arithmetic mean of a set of observations is \overline{X} . If each observation is divided by β and then it is increased by 12, then the mean of the new series is:

(A)
$$\frac{x}{\beta}$$

- (B) $\frac{x+12}{\beta}$
- (C) $\frac{\overline{x}+12\beta}{\beta}$
- (D) $\beta x + 12$
- 16) In a moderately skewed distribution, the values of mean and mode are 10k and 7k respectively. Its median is:
- (A) 6k
- (B) 7k
- (C) 8k
- (D) 9k
- 17) The mean weight per student in a group of 7 students is 55 kg. the individual weights of 6 of them are 52 kg, 58 kg, 55kg, 53 kg, 56 kg and 54 kg. the weight of the other students in kg is:
- (A) 57
- (B) 47
- (C) .0466
- (D) None of these
- 18) A person travels 480 miles per day. On the fir4st day his peed is 48 kmph, on the second day it is 40 kmph, and

on the third day it is 32 kmph. Find his average speed.

- (A) 38.9
- (B) 40
- (C) 16∛15
- (D) 36.
- 19) A firm readymade garments makes both men's and women's shirts. It profit average is 6% of sales. Its profit in men's shirts averages 8% of sales; and women's shirts comprise 60% of output. the average profit per sale rupee in women's shirts is:
- (A) 4.6
- (B) .466
- (C) 0.46
- (D) None of these
- 20) If \overline{X}_1 and \overline{X}_2 are the means of two distributions such that \overline{X}_1 , \overline{X}_2 and \overline{X} is the mean of the combined distribution, then
- (A) $\overline{X} < \overline{X}_1$
- (B) $\overline{X} > \overline{X}_2$
- (C) $\overline{X} = \frac{\overline{X}_1 + \overline{X}_2}{2}$
- (D) $\overline{X}_1, \overline{X}, \overline{X}_2$
- 21) Find the mode of the following distribution:

No. of student s Marks

- No. of student s
- (A) 36
- (B) 37.3
- (C) 38
- (D) 39
- 22) An aeroplane travels along four sides of a square with 100 kmph, 200

kmph, 200 kmph and 400 kmph speed. The average speed is:

- (A) 250 kmph
- (B) $200 \sqrt[4]{\frac{3}{2}}$ kmph
- (C) 192 kmph
- (D) 300 kmph
- 23) A student obtained 66, 95 and 85 marks respectively in three monthly examination in Mathematics and 90 marks in the final examination. The three monthly examinations re of equal weightage whereas the final examination is weighted twice as a much as a monthly examination. His mean marks for Maths is:
- (A) 85.2
- (B) 83.3
- (C) 86.2
- (D) None of these
- 24) If each of n numbers $x_i = i$ is replaced by (i + 1) x_i , then the new means is:

(A)
$$\frac{(n+1)(n+2)}{n}$$

- (C) $\frac{(n+1)(n+2)}{3}$
- (D) None of these
- 25) The average score of 100 students of 3 sections of class X is 55. The average 32 students is 60. the average score of third section is:
- (A) 55.45
- (B) 54.45
- (C) 65.45
- (D) None of these
- - where p+q=1, then the mean is:
- (A) nq
- (B) np
- (C) n(p+q)
- (D) None of these
- 27) The mean monthly salary paid to 75, employees in a company is Rs. 1420. The mean salary of 25 of them is Rs. 1350 and that of 30 others is Rs. 1425. the mean salary of the remaining is:
- (A) 1200
- (B) 1800

- (C) Rs. 1500
- (D) None of these
- 28) The means of 200 items was 50. Later on, it was discovered that two items were misread as 92 and 8 instead of 192 and 88. the correct mean is:
- (A) 50.7
- (B)
- (C) 50.6
- (D) 50.8
- (E) 50.9
- 29) The mean of the squares of first n natural number is:
- (A) $\frac{n(n+1)}{6}$
- (B) $\frac{(n+1)(2n+2)}{6}$
- (C) $\frac{(n+1)(2n-2)}{6}$
- (D) None of these
- 30) The average of first n natural number is
- (A) $\frac{(n+1)}{2}$
- (B) $\frac{n(n+1)}{2}$
- (C) $\frac{(n-1)}{2}$
- (D) None of these
- 31) The average score of girls in Class X examination in a school is 73 and that of boys is 71. The average score in Class X examination of the school is 71.8. the percentage of boys in Class X of the school is:
- (A) 40%
- (B) 60%
- (C) 30%
- (D) 65%
- 32) The mean age of a combined group of men and women is 25 years. if the mean age of the group of men is 26 and that of the group of women is 21, hen the percentage of mean and women in the group is:
- (A) 60,40
- (B) 80, 20
- (C) 20,80
- (D) 40,60
- 33) The mean height of 20 students is 155 cm. it is discovered later on that while calculating the correct mean, reading

149 cm was wrongly read as 189 cm. the correct mean is:

- (A) 151
- (B) 163
- (C) 153
- (D) 163.
- 34) A candidate obtains the following percentages in an examination. English 46%; Mathematics 67%; Sanskrit 72%; economics 58%; Political Science 53%. It is agreed to give double weights to marks in English and mathematics as compared to other subjects. The weighted mean is:
- (A) 58.4
- (B) 58.43
- (C) 58.42
- (D) 58.45
- 35) There are two branches of a company, employing 100 and 80 persons respectively. If the arithmetic mean of the monthly salaries paid by the two companies are Rs. 275 and Rs. 225 respectively, the arithmetic mean of the salaries of the employees of the companies as a whole is:
- (A) 252.78
- (B) 252.70
- (C) 253
- (D) None of these
- 36) A school has four sections of class X having 40, 35, 45 and 42 students. The mean marks obtained in Mathematics test are 50, 45, 40 and 30 representatively for the four sections. The overall average marks per students is:
- (A) 40.76
- (B) 46.86
- (C) 4.96
- (D) 40.66
- 37) The mean of the following data is 20.5

-									

The value of marks) is:

- (A) 40
- (B) 50
- (C) 30
- (D) None of these
- 38) The mean of monthly salary of 10 members of a group is Rs. 1445. One more member whose monthly salary is Rs. 1500 has joined the group. The mean of monthly salary of 11 members of he group outstanding:
- (A) 1445
- (B) 1450
- (C) 1500
- (D) None of these
- 39) The mean of the series x_1 , x_2 , x_n is \overline{X} . if x_2 is replaced by λ , then the new mean is:
- (A) $\overline{X} x_2 + \lambda$
- (B) $(\overline{X} x_2 \lambda)/n$
- (C) [(n-1) $\bar{X} + \lambda$]/n
- (D) $[n \overline{X} x_2 + \lambda]/n$.
- 40) The weighted ,mean pf first n natural numbers whose weights are equal outstanding give by
- (A) (2n+1)/2
- (B) (n+1)/2
- (C) (n-1)/2
- (D) (2n-1)/n
- 41) The interest paid Plant and Machinery each of three different sums of money yielding 3%, 4% and 5% simple interest p.a. respectively is ht same. The average yield per cent on the total sum invested is:
- (A) 3.38%
- (B) 2.38%
- (C) 4.38%
- (D) None of these
- 42) If two grades of oranges sell @ 10 for Re. 1 and 20 for Re. 1, respectively. The average price per orange, in paise is:
- (A) 7.5
- (B) 7
- (C) 6
- (D) 6.7
- 43) A train travels first 300 kilometers at an average rate of 30 k.p.h. and further travels the same distance at an average rate of 40 k.p.h. The

average speed over the whole distance is:

- (A) 34.29
- (B) 33.29
- (C) 35.25
- (D) 34.25
- 44) If the arithmetic mean of two numbers is 10 and their geometric mean is 8, their Harmonic mean is
- (A) 6.2
- (B) 6.4
- (C) 6.3
- (D) 5.4
- 45) A cyclist pedals from his house to his college at a sped of 10 k.p.h. and back from the college to his house at 15 k.p.h. His average speed in K.p.h. is:
- (A) 11
- (B) 12
- (C) 14
- (D) 13
- 46) An auto ride in Delhi costs Re. one for the first kilometer and sixty paise for each additional kilometer. The cost for each kilometer is incurred at the beginning of kilometer so that the rider pays for a whole kilometer. The average cost for 2.75 kilometer in rupees is:
- (A) 0.75
- (B) 0.80
- (C) 0.90
- (D) None of these
- 47) An investor buys Rs. 1200 worth of shares in a company each month. During the first 5 months, he bought the shares at a price of Rs. 10, Rs. 12, Rs. 15, Rs. 20 and Rs. 24 per share. After 5 months the average price paid for the shares in rupees is:
- (A) 14.63
- (B) 14
- (C) 14.23
- (D) 14.53
- 48) If G₁, G₂ are the geometric means of two series of observations and G is the GM of the ratios of the corresponding observations, then G is equal to
- (A) (G_1/G_2)
- (B) $\text{Log } G_1 \log G_2$

- (C) $\frac{\log G_1}{\log G_1}$
- log G₂
- (D) Log (G_1 , G_2).
- 49) A cyclist covers first three kms at an average speed of 8 k.p.h. Another two km at 3 k.p.h. and the last two km at 2 k.p.h. The average speed for the entire journey in kph is:
- (A) 2.43
- (B) 3.43
- (C) 4.43
- (D) None of these
- 50) If G is the G.M. of the product of r sets of observations with geometric means G_1 , G_2 , G_r respectively, then G is equal to
- (A) $\text{Log } G_1 + \log G_2 + \dots + \log G_n$
- (B) $G_1 \cdot G_2 \cdot \dots \cdot G_n$
- (C) $\text{Log } G_1 \cdot \log G_2 \cdot \dots \log G_n$
- (D) None of these
- 51) The points scored by basket-ball team in a series of matches are as follows: 15, 3, 8, 10, 22, 5, 27, 11, 12, 19, 18, 21, 13, 14. Its median is:
- (A) 13
- (B) 13.4
- (C) 13.5
- (D) 14.5
- 52) The heights (in cm) of 15 students of class X are: 152, 147, 156, 149, 148, 160, 153, 154, 150, 143, 155, 157, 161, 151, 159. Its median is:
- (A) 153
- (B) 148
- (C) 151
- (D) 154
- 53) The algebraic sum of the deviations of 20 observations measured from 30 is2. therefore, the mean of observations is:
- (A) 30.7
- (B) 30.1
- (C) 29.7
- (D) 29.1
- 54) In a family of 7 persons, there are three earning members having monthly incomes of Rs. 1800, Rs. 1400 and Rs. 1000. the average income of a member in the family is:
- (A) 500
- (B) 600

- (C) 700
- (D) 800
- 55) The average monthly wages of group of 10 persons is Rs. 1500. One member of the group, whose monthly wage is Rs. 1350, left the group and is replaced by a new member whose monthly wage is Rs. 1200. the new monthly wage is:
- (A) 1495
- (B) 1485
- (C) 1475
- (D) 1450
- 56) The mean of 20 observations is 15. on checking, it was found that the two observations were wrongly copies as 3 and 6. if wrong observations are replaced by their correct values 8 and 4, then the correct mean is:
- (A) 15.5
- (B) 15.3
- (C) 15.15
- (D) 16

1	Δ	2	۸	2	R	1	C	5	B	6	B	7	<u> </u>	8	<u> </u>
1.	~	۷.	~	5.	D		C	5.	Б	0.	D	7.	C	0.	C
9.	A	10.	С	11.	А	12.	С	13.	В	14.	A	15.	С	16.	D
17.	А	18.	А	19.	А	20.	D	21.	А	22.	С	23.	А	24.	С
25.	A	26.	В	27.	С	28	D	29	В	30	A	31	В	32.	В
33.	С	34.	В	35.	А	36.	С	37.	А	38.	В	39.	D	40.	В
41.	A	42.	А	43.	А	44.	В	45.	В	46.	В	47.	А	48.	А
49.	В	50.	В	51.	С	52.	A	53.	В	54.	В	55.	В	56.	С

ANSWERS