Bhagya Achievers Test Series

CA Foundation

Paper 3: Quantitative Aptitude

Chapter 14: Measures of Central Tendency and Dispersion

Total Marks: 20

Time: 40 min.

Question1. (1 Mark)

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

Question2. (1 Mark)

In the subject of Mathematics, the mean marks got by 275 students is 47. Of them the mean of the top 75 studens was found to be 59 and the mean of the last 100 was found to be 28. Find the mean of the remaining 100 students who are of average type.

(a) 56
(b) 58
(c) 59
(d) 57

Question3. (1 Mark)

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

Question4. (1 Mark)

The mean weight of a group of 10 items is 28 and that of another group of n items is 35. The mean of combined group of 10 + n items is found to be 30. The value of n is:

(a) 2
(b) 4
(c) 10
(d) 12

Question5. (1 Mark)

The third quartile and 65th percentile for the following data are

Profits in '000 Rs.:	Less than 10	Oct-19	20-29	30-39	40-49	50-59
No. of firms:	5	18	38	20	9	2

(a) Rs. 33,500 and Rs. 29,184
(b) Rs. 33,000 and Rs. 28,680
(c) Rs. 33,600 and Rs. 29,000
(d) Rs. 33,250 and Rs. 29,250.

Question6. (1 Mark)

If X_1 X_2.....X_n be n observations, then the quantity $(x_1,x_2X_3,.....x_n)^{1/n}$ is called

(a) G.M
(b) A.M
(c) H.M
(d) None of these

Question7. (1 Mark)

If S.D of a varaiate x is σ, then S. D of $\frac{ax+b}{p}$ ($\forall$ a,b, $p_{\in}$R) is

(a) $\frac{a}{p}\sigma_x$

(b) $\left|\frac{a}{p}\right| \sigma_x$

(c) $\left|\frac{p}{a}\right| \sigma_x$

(d) $\frac{p}{a} \sigma_x$

Question8. (1 Mark)

A sample of 35 observations has the mean 80 and S.D. as 4. A second sample of 65 observations from the same population has mean 70 and S.D. 3. The S.D. of the combined sample is:

(a) 5.85
(b) 5.58
(c) 34.2
(d) None of these

Question9. (1 Mark)

The Mean height of 20 students is 155cm. It is discovered later on that while calculating the correct mean, the reading 149 cm was wrongly read as 189 cm. The correct mean is

(a) 151
(b) 163
(c) 153
(d) 163

Question10. (1 Mark)

The mean and mode for the following frequency distribution

Class interval	350-639	370-389	390-409	430-449	430-449	450-469
Frequency	15	27	31	19	13	6

(a) 400 and 390
(b) 400.58 and 390
(c) 400.58 and 394.50
(d) 400 and 394

Question11. (1 Mark)

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, then the percentage of men and women in the group is:

(a) 60,40
(b) 80,20
(c) 20,80
(d) 40,60

Question12. (1 Mark)

A man goes from his house to his office at the speed of 20km/h and returns from his office to home at the speed of 30 km/h. His mean speed is

(a) 24 km/h
(b) 10.5Km/h
(c) 25km/h
(d) None of these

Question13. (1 Mark)

Find the mean and median from the following data:

Marks	less than 10	less than 10	less than 10	less than 10	less than 10
No. of students	5	13	23	27	30

(a) Mean=22.33, median =22 and mode= 21.34
(b) Mean = 27, median = 27 and mode = 2
(c) Mean = 21.75, median = 21 and mode = 24
(d) Mean = 22, median = 20 and mode = 22.34

Question14. (1 Mark)

The harmonic Mean of the numbers 2, 4, 8, 16, is

(a) $\frac{2+4+8+16}{4}$
(b) $(2\times 4\times 8\times 16)^{1/4}$
(c) $\frac{4}{(1/2)+(1/4)+(1/8)+(1/16)}$

(d) None of these

Question15. (1 Mark)

A group of 100 items has mean 60 and Standard Deviation 16. Later on it was observed that two items 12 and 30 were misread as 20 and 13. Find the correct Mean and Standard Deviation corresponding to correct items.

(a) $\overline{X}$ =68.09,$\sigma = 15.83$
(b) $\overline{X}$=70.09, $\sigma = 15.82$
(c) $\overline{X}$ =61.09,σ=15
(d) $\overline{X}$ =60.09,σ=15.81

Question16. (1 Mark)

Following distribution relates to the distribution of monthly wages of 10 workers.

Wages in (')	Less than					More than
No. of workers	500	500-699	700-899	900-1099	1100-1499	1500
No. of workers	5	23				

Compute Q3, D7 and P23.

(a) 680
(b) 656.02
(c) 665.3
(d) 680.5

Question17. (1 Mark)

If the Mean and Standard Deviation of a distribution are 22 and 10.53 respectively, construct the original data from the following information:

dx' :	-2	-2	0	1	2
F :	3	5	8	3	1

where dx' = deviation of items taken from assumed mean divided by class interval.

(a) 0-10, 10-20, 20-30, 30-40, 40-50, i = 10
(b) 0-10, 10-20, 20-30, 30-40, 40-50, i = 11
(c) 0-10, 10-20, 20-30, 30-40, 40-50, i = 12
(d) 0-10, 10-20, 20-30, 30-40, 40-50, i = 13

Question18. (1 Mark)

What is the mean deviation about mean for the following distribution?

Variable: 5 10 15 20 25 30

Frequency: 3 4 6 5 3 2

(a) 6.00
(b) 5.93
(c) 6.07
(d) 7.20

Question19. (1 Mark)

If mean of n items is $\bar{x}$, if each item is successively increased by $3,3^2$_____$3^n{}_t$the new Mean equals

(a) $\bar{x} + \frac{3^{n+1}}{n}$
(b) $\bar{x} + \frac{3(3^{n-1})}{2n}$
(c) $\bar{x} + \frac{3^n}{n}$
(d) $\bar{x} + \frac{3^n - 1}{2n}$

Question20. (1 Mark)

The average weight of 8 persons increases by 1.5 Kg. if a person weighing 65 Kg is repalced by new person, what would be the weight of new person?

(a) 76 kg
(b) 80kg
(c) 77kg
(d) None of these