

Chapter 14: Measures of Central Tendency and Dispersion

Arithmetic Mean

Past Year Questions

PYQ May 18

- (1) If the variables x and z are so related that $z = ax + b$ for each where a and b are constant, then $z = ax + b$
- a. True
b. False
c. Both
d. None of these

PYQ May 18

- (2) If each item is reduced by 15 A. M is
- a. Reduced by 15
b. Increased by 15
c. Reduced by 10
d. None of these

PYQ May 18

- (3) The average of a series of overlapping averages, each of which is based on a certain number of item within a series is know as.
- a. Moving average
b. Weighted average
c. Simple average
d. None of these

PYQ Nov. 18

- (4) The mean of 20 items of a data is 5 & if each item is multiplied by 3, then the new mean will be
- a. 5
b. 10
c. 15
d. 20

PYQ Nov. 18

- (5) The algebraic sum of the deviation of a set of values from their arithmetic mean is
- a. >0
b. $=0$
c. <0
d. None of these

PYQ May 18

- (6) Which one of the following is not a central tendency?
- a. Mean Deviation
b. Arithmetic mean
c. Median
d. Mode

PYQ Nov. 18

- (7) If total frequencies of three series are 50, 60 and 90 and their means are 12, 15 and 20 respectively, then the mean of their composite series is
- a. 16
b. 15.5
c. 16.5
d. 14.5

PYQ Nov. 18

- (8) If the mean of the following distribution is 6 then the value of P is

| | | | | | |
|---|---|---|---|----|-------|
| X | 2 | 4 | 6 | 10 | $P+5$ |
| F | 3 | 2 | 3 | 1 | 2 |

- a. 7
b. 5
c. 8
d. 11

PYQ June 19

- (9) The AM of 15 observation is 9 and the AM of first 9 observation is 11 and then AM of remaining observation is
- a. 11
b. 6
c. 5
d. 9

PYQ Nov. 19

- (10) $\sum_{i=1}^n (\bar{x} - x_i)$ is equal to

- a. $\bar{x} \sum_{i=1}^n x_i$
b. $n(\bar{x} \sum_{i=1}^n x_i)$
c. $\bar{x} - n\bar{x}$
d. Zero

PYQ July 21

- (11) There are n numbers. When 50 is subtracted from each of these number the sum of the numbers so obtained is -10 . When 46 is subtracted from each of the original n numbers, then the sum of numbers so obtained is 70. What is the mean of the original n numbers?
- a. 56.8
b. 25.7
c. 49.5
d. 53.8

PYQ July 21

- (12) The mean of ' n ' observation is ' x '. If k is added to each observation, then the new mean is.
- a. k
b. xk
c. $x - k$
d. $x + k$

PYQ Dec. 21

- (13) If there are 3 observations 15, 20, 25 then sum of deviation of the observations from AM is
- a. 0
b. 5
c. -5
d. 10

PYQ Dec. 21

- (14) If average mark for a group of 30 girls is 80, a group of boys is 70 and combined average is 76, then how many are in the boy's group?
- a. 21 b. 20
c. 22 d. 19

PYQ Dec. 21

- (15) For a data having odd number of values, the difference between the first and the middle value is equal to the difference between the last and the middle value; similarly, the difference between the second and middle values is equal to that of second last and middle value so on. Therefore, the middle value is equal to
- a. Half of the range
b. Half of standard deviation
c. Mode
d. Mean

PYQ June 22

- (16) When each value does not have equal importance then we use
- a. AM b. GM
c. HM d. Weighted Avg.

PYQ June 22

- (17) The mean of 20 observation is 38. If two observation are taken as 84 and 36 instead of 48 and 63 find new means.
- a. 38.45 b. 41.15
c. 37.55 d. 40.05

PYQ Dec 22

- (18) The mean of 50 observations is 36. If two observations 30 and 42 are to be excluded, then the mean of the remaining observations will be:
- a. 36 b. 38
c. 48 d. 50

PYQ Dec 22

- (19) The average age of 15 students in a class is 9 years. Out of them, the average age of 5 students is 13 years and that 8 students is 5 years. What is the average of remaining 2 students?
- a. 5 years b. 9 years
c. 10 years d. 15 years

PYQ Jun 23

- (20) A professor has given assignment to students in a Statistics class. A student Jagan computes the arithmetic mean and standard deviation for a set of 100 observations as 50 and 5 respectively. Later on, Sonali points out to Jagan that he has made of mistake in taking one observation as 100

instead of 50. What would be the correct mean if the wrong observation is corrected?

- a. 50.5 b. 49.9
c. 49.5 d. 50.1

PYQ Jun 23

- (21) Find the mean of the following data

| Class interval | Frequency |
|----------------|-----------|
| 10-20 | 9 |
| 20-30 | 13 |
| 30-40 | 6 |
| 40-50 | 4 |
| 50-60 | 6 |
| 60-70 | 2 |
| 70-80 | 3 |

- a. 23.7 b. 35.7
c. 39.7 d. 43.7

PYQ Jun 23

- (22) The mean of a set of 20 observations is 18.3. The mean is reduced by 0.6 when a new observation is added to the set. The new observation is:

- a. 17.6 b. 18.9
c. 5.7 d. 24.6

PYQ Dec 23

- (23) If mean of 5 observations $x+1, x+3, x+5, x+7$ and $x+9$ is given 15, then the value of x will be:

- a. 10 b. 12
c. 8 d. 11

PYQ Dec 23

- (24) The mean of the first three terms is 17 and mean of next four terms is 21. Calculate the mean of seven terms.

- a. 18.28 b. 19.78
c. 19.58 d. 19.28

PYQ Dec 23

- (25) The mean of a set of 20 observations is 18.3. The mean is reduced by 0.6 when a new observation is added to the set. The new observation is:

- a. 17.6 b. 18.9
c. 5.7 d. 24.6

PYQ June 24

- (26) The mean of a set of 20 observations is 18.3. The mean is reduced by 0.6 when a new observation is added to the set. The new observation is:

- a. 17.6 b. 18.9
c. 5.7 d. 24.6

PYQ June 24

- (27) If there are two groups containing 40 and 30 observations and have arithmetic means as 50 and 60, then the combined arithmetic mean is
- a. 55.48 b. 56.35
c. 54.28 d. 50.28

PYQ Sep 24

- (28) The mean of group X is 70 and the mean of group Y is 85. If the number of observations in group Y is five times that of group X, then the combined mean of both the group is:
- a. 80 b. 75
c. 77.5 d. 82.5

Answer Key

| | | |
|------|------|------|
| 1 a | 2 a | 3 a |
| 4 c | 5 b | 6 a |
| 7 c | 8 a | 9 b |
| 10 d | 11 c | 12 d |
| 13 a | 14 b | 15 d |
| 16 d | 17 c | 18 a |
| 19 d | 20 c | 21 b |
| 22 c | 23 a | 24 d |
| 25 c | 26 c | 27 c |
| 28 d | | |

Arithmetic Mean

Mock Test Paper Questions

MTP May 18

- (1) The mean of first 3 terms is 14 and the mean of next 2 terms is 18. The mean of 5 numbers is
- a. 14.5 b. 15
c. 14 d. 15.6

MTP Nov 18

- (2) If the mean of the set of observations $x_1, x_2, x_3, \dots, x_n$, is \bar{x} , then the mean of the observation $x_i + ki$, where $i = 1, 2, 3, \dots, n$
- ★
- a. $\bar{x} + k(n+1)$
b. $\bar{x} + kn$
c. $\bar{x} + \frac{k}{n}$
d. $\bar{x} + \frac{k}{2}(n+1)$

MTP Nov 18

- (3) The mean salary for a group of for a group of 50 male workers is Rs.4800 per month and that for a group of 50 female workers is Rs. 5600. the combined mean salary is
- a. 5100 b. 5200
c. 5300 d. 5400

MTP Nov 18

- (4) The mean age of a group of 100 men and women is 25 years. If the mean age of the group of men is 26, then that of the group of women is 21 then the ratio of women and men in the group:
- a. 1:1 b. 1:2
c. 1:3 d. 1:4

MTP May 19, ICAI SM/ MTP Sep 24 II

- (5) If the relationship between two variables u and v are given by $2u + v + 7 = 0$ and if the AM of u is 10, then the AM of v is
- a. 17 b. -17
c. -27 d. 27

MTP May 19 Series II

- (6) If there are 3 observations 15, 20, 25 then the sum of deviation of the observations from their AM is
- a. 0 b. 5
c. -5 d. None of these

MTP Nov 19

- (7) The mean of the values of 1, 2, 3 ..., n with ★ respective frequencies $x, 2x, 3x, \dots, nx$ is.
- a. $\frac{n+1}{2}$ b. $\frac{n}{2}$
c. $\frac{2n+1}{3}$ d. $\frac{2n+1}{6}$

MTP Nov 19

- (8) The mean of four observations is 10 and when a constant a is added to each observation, the mean becomes 13. The value of a is
- a. 2 b. -3
c. 3 d. None of these

MTP Nov 19, ICAI SM

- (9) The average salary of a group of unskilled workers is Rs.10,000 and that of a group of skilled workers is Rs.15,000. If the combined salary is Rs.12,000, then what is the percentage of skilled workers?
- a. 40% b. 50%
c. 60% d. None of these

MTP Nov 19

- (10) The average of n numbers is x . If each of the numbers is multiplied by $(n+1)$; then the average of new set of numbers is
- | | |
|-------------|------------------|
| a. x | b. $x/(n+1)$ |
| c. $(n+1)x$ | d. None of these |

MTP Nov 19

- (11) The average weight of 8 person increases by 1.5 kg, if a person weighing 65 kg replaced by a new person, what would be the weight of the new person?
- | | |
|----------|------------------|
| a. 76 kg | b. 80 kg |
| c. 77 kg | d. None of these |

MTP May 20

- (12) If the relationship between two variables u and v are given by $2u + v + 7 = 0$ and if the AM of u is 10, then the AM of v is
- | | |
|--------|--------|
| a. 17 | b. -17 |
| c. -27 | d. 27 |

ICAI SM, MTP Nov 20

- (13) Two variables assume the values 1, 2, 3, ... 5 with frequencies as 1, 2, 3, ... 5, then what is the AM?
- | | |
|-----------|-----------|
| a. $11/3$ | b. $15/8$ |
| c. 4.86 | d. 10 |

MTP March 21

- (14) The sum of the squares of deviations of a set of observations has the smallest value, when the deviations are taken from their:
- | | |
|--------|---------|
| a. A.M | b. H.M |
| c. G.M | d. None |

MTP March 21

- (15) Let the mean of the variable ' x ' be 50, then the mean of $u=10+5x$ will be:
- | | |
|--------|--------|
| a. 250 | b. 260 |
| c. 265 | d. 273 |

MTP March 21

- (16) If sum of squares of the values = 3390, $N = 30$ and standard deviation = 7, find out the mean.
- | | |
|--------|------------------|
| a. 113 | b. 210 |
| c. 8 | d. None of these |

MTP March 21

- (17) Which of the following measures of central tendency cannot be calculated by graphical method?
- | | |
|-----------|-------------|
| a. Mean | b. Mode |
| c. Median | d. Quartile |

MTP Apr 21

- (18) The mean salary for a group of 40 female workers is 5000 per month and that for a group of 60 male

workers is 6000 per month. What is the combined mean salary?

- | | |
|---------|---------|
| a. 6500 | b. 6200 |
| c. 6160 | d. 5600 |

MTP Mar 21, MTP Apr 21

- (19) The mean of the variable x is 50, then the mean of $u = 10+5x$ will be
- | | |
|--------|--------|
| a. 250 | b. 260 |
| c. 265 | d. 273 |

MTP Apr 21

- (20) The sum of mean and SD of a series is $a + b$, if we add 2 to each observations of the series then the sum of the mean and SD is
- | | |
|------------|------------|
| a. $a+b+2$ | b. $6-a+b$ |
| c. $4+a-b$ | d. $a+b+4$ |

MTP Nov 21

- (21) At ABC ltd, the average age of employees is 36. Average age of male employees is 38 and that of females is 32. Find the ratio of female to male in the company.
- | | |
|--------|--------|
| a. 1:3 | b. 2:1 |
| c. 1:2 | d. 3:1 |

MTP Nov 21

- (22) The mean height of girls in class is 162cm while for boys is 182cm. The ratio of no. of girls: boys is 1:2. Find the mean height of the whole class
- | | |
|-----------|-----------|
| a. 170 cm | b. 180 cm |
| c. 154 cm | d. 175.33 |

MTP Nov 21

- (23) The average of 10 observations is 14.4. If the average of first four observations is 16.5. The average of remaining 6 observations is :
- | | |
|---------|---------|
| a. 13.6 | b. 13.0 |
| c. 13.2 | d. 12.5 |

MTP Oct 21

- (24) Mean of 25, 32, 43, 53, 62, 59, 48, 31, 24, 33 is
- | | |
|-------|-------|
| a. 44 | b. 43 |
| c. 42 | d. 41 |

MTP Oct 21

- (25) If the A.M of any distribution be 25 & one term is 18. Then the deviation of 18 from A.M is
- | | |
|-------|------------------|
| a. 7 | b. -7 |
| c. 43 | d. None of these |

MTP Oct 21

- (26) The algebraic sum of the deviations of a frequency distribution from its mean is always,
- | |
|----------------------|
| a. greater than zero |
| b. less than zero |
| c. zero |

d. a non-zero number

MTP Oct 21

- (27) Pooled Mean is also called
- a. Mean
 - b. Geometric Mean
 - c. Grouped Mean
 - d. none

MTP March 22

(28) If average marks for a group of 30 girls is 80, a group of boys is 70 and combined average is 76, then how many boys are in the group?

- a. 21
- b. 20
- c. 22
- d. 19

MTP March 22

(29) If there are three observations 15, 20, 25, then the sum of deviation of the observations from their AM is.

- a. 0
- b. 5
- c. -5
- d. 10

MTP March 22

(30) The mean weight of 15 students is 110 kg. The mean weight of 5 of them is 100 kg. and of another five students is 125 kg. then the mean weight of the remaining students is :

- a. 120
- b. 105
- c. 115
- d. None of these

MTP June 22

(31) A batsman in his 20th innings makes a score of 120 and thereby increases his average by 5. What is his average after 20th innings?

- a. 60
- b. 55
- c. 25
- d. 70

MTP June 22

(32) The mean of first three terms is 14 and mean of next two terms is 18. The mean of all five terms

- a. 14.5
- b. 15
- c. 14
- d. 15.6

MTP Dec 22 - Series I

(33) In a group of persons, average weight is 60 kg. If the average of males and females taken separately is 80 kg and 50 kg respectively, find the ratio of the number of males to that of females.

- a. 2:3
- b. 3:2
- c. 2:1
- d. 1:2

MTP Dec 22 - Series I

(34) The mean of 100 students was 45. Later, it was discovered that the marks of two students were misread as 85 and 54 instead of 58 and 45. Find correct mean.

- a. 68
- b. 36
- c. 44.64
- d. 52

MTP Dec 22 Series II

(35) The AM of 15 observations is 9 and the AM of first 9 observations is 11 and then AM of remaining observations is:

- a. 11
- b. 6
- c. 5
- d. 9

MTP June 2023 Series I

(36) The mean of 100 observations is 50. If one of the observations which was 50 is replaced by 40, the resulting mean will be:

- a. 40
- b. 49.90
- c. 50
- d. None of these

MTP June 2023 Series I

(37) The mean annual salary of all employees in a company is ₹ 25,000. The mean salary of male and female employees is ₹ 27,000 and ₹ 17,000 respectively. Find the percentage of males and females employed by the company

- a. 60% and 40%
- b. 70% and 25%
- c. 70% and 30%
- d. 80% and 20%

MTP June 2023 Series I

(38) The average age of 15 numbers in a class is 9 years. Out of them, the average age of 5 students is 13 years and that 8 students is 5 years. What is the average of remaining 2 students?

- a. 5 years
- b. 9 years
- c. 10 years
- d. 15 years

MTP June 2023 Series II

(39) The students of a class 10th have an average weight of 50 kg. The strength of the class is 49 students. On including the weight of the principal, the average weight shoots up by 0.8 kg. Find the weight of the principal?

- a. 75
- b. 90
- c. 85
- d. None of these

MTP June 2023 Series II

(40) The average of $(p+q)$ consecutive numbers starting from 1 is 'r'. If 's' is added to each of the numbers then the new average will be?

- a. $r+s$
- b. $r+(s/2)$
- c. r
- d. None of these

MTP June 2023 Series II

- (41) The average weight of 40 people is increased by 2.4 kg when one man weight 73 kg is replaced by another man. Find the weight of the new man?
- a. 121 b. 169
c. 154 d. 149

MTP June 2023 Series II

- (42) The average salary of the whole employees in a company is ₹ 400 per day. The average salary of officers is ₹ 800 per day and that of clerks is ₹ 320 per day. If the number of officers is 40, then find the number of clerks in the company?
- a. 50 b. 100
c. 150 d. 200

MTP June 2023 Series II

- (43) The average of 6 numbers is 30. If the average of the first four is 25 and that of the last three is 35, the fourth number is
- a. 25 b. 30
c. 35 d. 40

MTP June 2023 Series II

- (44) A student marks were wrongly entered as 85 instead of 45. Due to that the average marks for the whole class got increased by one-fourth. The no. of students in the class is?
- a. 80 b. 160
c. 40 d. 20

MTP Dec 2023 Series I

- (45) The mean salary of a group of 50 persons is Rs. 5850. Later on it is discovered that the salary of one has been wrongly taken as Rs.8000 instead of RS. 7800. The corrected mean salary is
- a. Rs.5854 b. Rs.5846
c. Rs.5640 d. None of these

MTP Dec 2023 Series I

- (46) The algebraic sum of the deviations of set of values from their arithmetic mean is
- a. >0 b. <0
c. 0 d. None of these

MTP Dec 2023 Series I

- (47) The AM of 15 observations is 9 and the AM of first 9 observations is 11 and then AM of remaining observations is
- a. 11 b. 6
c. 5 d. 9

MTP Dec 2023 Series II

- (48) The weighted mean of first n natural numbers, if their weights are proportional to their corresponding numbers is

- a. $\frac{2n+1}{3}$ b. $\frac{n-1}{2}$
c. $\frac{(n+1)(2n-1)}{6}$ d. $\frac{3n(n+1)}{2}$

MTP Dec 2023 Series II

- (49) The average wages of a group of unexperienced labours is ₹ 1000 and that of a group of experienced labours is ₹ 1,500. If the combined wage is ₹ 1200, then what is the percentage of experienced labours?
- a. 60% b. 40%
c. 50% d. None of these

MTP Dec 2023 Series II

- (50) If the arithmetic mean of 1st n natural numbers is $\frac{6n}{11}$ then the value of 'n' is:
- a. 10 b. 11
c. 14 d. None of these

MTP Dec 2023 Series II

- (51) The average age of a group of 10 students was 20 years. The average age is increased by two years when two new students joined the group. What is the average age of two new students who joined the group?
- a. 22 years b. 30 years
c. 44 years d. 32 years

MTP Dec 2023 Series II

- (52) There were 50 students in a class. 10 failed whose average marks were 2.5. The total marks of class were 281. Find the average marks of students who passed?
- a. 6.4 b. 25
c. 256 d. 86

MTP Dec 2023 Series II

- (53) When 10 is subtracted from all the observations, the mean is reduced to 60% of its value. If 5 is added to all the observations, then the mean will be
- a. 25 b. 30
c. 60 d. 65

MTP June 24 Series I

- (54) The mean salary for a group of 40 female workers is ₹ 5200 per month and that for a group of 60 male workers is ₹ 6800 per month. What is the combined salary?
- a. ₹ 6160 b. ₹ 6280
c. ₹ 6890 d. ₹ 6920

MTP June 24 Series I

(53) The mean weight of 15 students is 110 kg. The mean weight of 5 of them is 100 kg. and that of another five students is 125 kg., then the mean weight of the remaining students is:

- a. 120
b. 105
c. 115
d. None of these

MTP June 24 Series I

(56) The average age of 15 students is 15 years. Out of these the average age of 5 students is 14 years and that of other 9 students is 16 years, then the age of 15th student is _____

- a. 11 years
b. 14 years
c. 15 years
d. None of these

MTP June 24 Series II

(57) The average of marks obtained by 120 students in a certain examination is 35. If the average marks of passed students is 39 and that of the failed students is 15; what is the number of students who passed in the examination?

- a. 100
b. 150
c. 200
d. None of these

MTP June 24 Series II

(58) The mean of the values of 1, 2, 3 n with respective frequencies x, 2x, 3x, nx is

- a. $\frac{n+1}{2}$
b. $\frac{n}{2}$
c. $\frac{2n+1}{3}$
d. $\frac{2n+1}{6}$

MTP June 24 Series II

(59) Two variables x and y are related by $5x+2y+5=0$ and $\bar{x}=5$, then \bar{y} is

- a. 10
b. -10
c. 15
d. -15

MTP June 24 Series III

(60) The mean of first 3 terms is 14 and the mean of next 2 terms is 18. The mean of 5 numbers is -

- a. 14.5
b. 15
c. 14
d. 15.6

MTP Sep 24 Series I

(61) The Mean of a set of 20 observations on 18.3. The mean is reduced by 0.6 when a new observation is added to the set. The new observation is:

- a. 17.6
b. 18.0
c. 5.7
d. 24.6

MTP Sep 24 Series I

(62) The mean salary of a group of 50 persons is ₹5850. Later on it is discovered that the salary of one has been wrongly taken as ₹8000 instead of ₹7800. The corrected mean salary is

- a. ₹5854
b. ₹5846
c. ₹5840
d. None

MTP Sep 24 Series I

(63) The algebraic sum of the deviations of set of values from their arithmetic mean is:

- a. >0
b. <0
c. 0
d. None of these

MTP Sep 24 Series I

(64) The AM of 15 observations is 9 and the AM of first 9 observations is 11 and then AM of remaining observations is

- a. 11
b. 6
c. 5
d. 9

Answer Key

| | | |
|------|------|------|
| 1 d | 2 d | 3 b |
| 4 d | 5 c | 6 a |
| 7 c | 8 c | 9 a |
| 10 c | 11 c | 12 c |
| 13 a | 14 a | 15 b |
| 16 c | 17 a | 18 d |
| 19 b | 20 a | 21 c |
| 22 d | 23 b | 24 d |
| 25 b | 26 c | 27 c |
| 28 b | 29 a | 30 b |
| 31 c | 32 d | 33 d |
| 34 c | 35 b | 36 b |
| 37 d | 38 d | 39 B |
| 40 a | 41 b | 42 d |
| 43 a | 44 b | 45 b |
| 46 c | 47 b | 48 a |
| 49 b | 50 b | 51 b |
| 51 d | 52 a | 53 b |
| 54 a | 55 b | 56 a |
| 57 a | 58 c | 59 d |
| 60 d | 61 c | 62 b |
| 63 c | 64 b | |

Median and Partition Values

Past Year Questions

PYQ May 18

- (1) For 899, 999, 391, 384, 390, 480, 485, 760, 111, 240. Rank of median
- a. 2.75 b. 5.5
c. 8.25 d. None of these

PYQ Nov. 18

- (2) The median of the data 5, 6, 7, 8, 9, 10, 11, 12, 15, 18, 18 and 19 is
- a. 10.5 b. 10
c. 11 d. 11.5

PYQ June 19

- (3) Which of the following is positional average?
- a. Median b. GM
c. HM d. AM

PYQ June 19

- (4) For the distribution, The value of median is

| | | | | | | |
|---|---|---|----|----|----|---|
| x | 1 | 2 | 3 | 4 | 5 | 6 |
| f | 6 | 9 | 10 | 14 | 12 | 8 |

- a. 3.5 b. 3
c. 4 d. 5

PYQ Nov. 19

- (5) The deviations are minimum when taken from:
- a. Mean b. Median
c. Mode d. None of these

PYQ Nov. 19

- (6) Find the median of the following.

| | | | | | |
|-------|------|-------|-------|-------|-------|
| Class | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
| Freq. | 2 | 3 | 4 | 5 | 6 |

- a. 35 b. 32
c. 36 d. 37.5

PYQ Nov. 19

- (7) Find the median of the following:

| | | | | | |
|-------|------|-------|-------|-------|-------|
| Class | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
| Freq. | 5 | 15 | 28 | 10 | 2 |

- a. 10.57 b. 23.57
c. 25 d. None of these

PYQ Nov. 20

- (8) Which measure is suitable for open-end classification?

- a. Median b. Mean
c. Mode d. GM

PYQ Nov. 20

- (9) 50th Percentile is equal to

- a. Median b. Mode
c. Mean d. None of these

PYQ Nov. 20

- (10) Which one of the these is least affected by extreme value?
- a. Mean b. Median
c. Mode d. None of these

PYQ Nov. 20

- (11) Ten matches data is given. Then which of the following cannot be found?
- a. Least score
b. Highest score
c. Best score
d. Median score

PYQ Jan. 21

- (12) Which of the following measure does not possess mathematical properties?
- a. Arithmetic mean
b. Geometric mean
c. Harmonic mean
d. Median

PYQ Dec. 21

- (13) The median value of the set of observations 48, 36, 72, 87, 19, 66, 56, 91 is
- a. 53 b. 87
c. 61 d. 19

PYQ Dec. 21

- (14) Along a road there are 5 buildings of apartments, marked as 1, 2, 3, 4, 5. Number of people residing in each building is available. A bus stop is to be setup near one of the buildings so that the total distance walked by the resident to the bus stop from their buildings must be kept minimum. One must consider involving _____ to find the position of the bus stop.
- a. Mean b. Median
c. Mode d. Weighted mean

PYQ June 22

- (15) The 3rd decile for the numbers 15, 10, 20, 25, 18, 11, 9, 12 is
- a. 13 b. 10.70
c. 11.00 d. 11.50

PYQ Dec 22

- (16) The relationship between two variables x and y is given by $4x - 10y = 20$. If the median value of the variable x is 10 then what is median value of variable y?
- a. 1.0 b. 2.0
c. 3.0 d. 4.0

- (17) Mean deviation is minimum when deviations are taken from:
- Mean
 - Median
 - Mode
 - Range

PYQ Dec 22

- (18) The median of the observations 42, 72, 35, 92, 67, 85, 72, 81, 51, 56 is:
- 69.5
 - 72
 - 64
 - 61.5

PYQ Dec 22

- (19) The median of the following set of observation: 24, 18, 36, 42, 30, 28, 21, 29, 25, 33 is
- 26.5
 - 27.5
 - 28.5
 - 29.5

PYQ Jun 23

- (20) For a given data set: 5, 10, 3, 6, 4, 8, 9, 3, 15, 2, 9, 4, 19, 11, 4; what is the median?
- 8
 - 6
 - 4
 - 9

PYQ Jun 23

- (21) The median of the following frequency distribution is

PYQ Dec 23

| x | f(x) |
|-------|------|
| 0-10 | 3 |
| 10-20 | 5 |
| 20-30 | 20 |
| 30-40 | 12 |
| 40-50 | 7 |

- 27.75
- 9.35
- 8.25
- 10.01

PYQ Dec 23

- (22) If two variable 'x' and 'y' are related as $2x - y = 3$, if the median of 'x' is 10, what is median of 'y'?
- 4
 - 7
 - 5
 - 6

PYQ June 24

- (23) Which of the following measure of central tendency will be unaffected if the lowest and highest observation are removed?
- Mean
 - Mode
 - Median
 - Range

PYQ June 24

- (24) Which of the following measure of central tendency depends on the position of the observation?

- Mean
- Median
- Mode
- Harmonic Mean

- (25) The median of the following frequency distribution is:

PYQ Sep 24

| x | f(x) |
|-------|------|
| 0-10 | 8 |
| 10-20 | 30 |
| 20-30 | 40 |
| 30-40 | 12 |
| 40-50 | 10 |

- 22.5
- 33
- 23
- 24

Answer Key

- | | | |
|------|------|------|
| 1 b | 2 a | 3 a |
| 4 c | 5 b | 6 b |
| 7 b | 8 a | 9 a |
| 10 b | 11 c | 12 d |
| 13 c | 14 b | 15 b |
| 16 b | 17 b | 18 a |
| 19 c | 20 b | 21 a |
| 22 b | 23 c | 24 b |
| 25 c | | |

Median and Partition Values

Mock Test Paper Questions

MTP May 19/ RTP Sep 24

- (1) For open-end classification, which of the following is the best measure of central tendency?
- AM
 - GM
 - Median
 - Mode

MTP May 19

- (2) The presence of extreme observations does not affect
- AM
 - Median
 - Mode
 - Any of these

MTP May 19

- (3) Quartiles are the values dividing a given set of observations into
- Two equal parts
 - Four equal parts
 - Five equal parts
 - None of these

MTP May 19

- (4) What is the value of the first quartile for observations 15, 18, 10, 20, 23, 28, 12, 16?
 a. 17 b. 16
 c. 12.75 d. 12

MTP May 19 Series II

- (5) The presence of extreme observations does not affect
 a. AM b. Median
 c. Mode d. Any of these

MTP May 19 Series II

- (6) The third decile for the numbers 15, 10, 20, 25, 18, 11, 9, 12 is
 a. 13 b. 10.70
 c. 11 d. 11.50

MTP Nov 19

- (7) The third decile for the numbers 15, 10, 20, 25, 18, 11, 9, 12 is
 a. 13 b. 10.7
 c. 11 d. 11.50

MTP Nov 19

- (8) For open-end classification, which of the following is the best measure of central tendency?
 a. AM b. GM
 c. Median d. Mode

MTP Nov 19

- (9) The presence of extreme observations does not affect
 a. AM b. Median
 c. Mode d. None of these

MTP Nov 19

- (10) Two variables x and y are given by $y = 2x - 3$. If the median of x is 20, what is the median of y ?
 a. 20 b. 40
 c. 37 d. 35

MTP May 20

- (11) For open-end classification, which of the following is the best measure of central tendency?
 a. AM b. GM
 c. Median d. Mode

MTP May 20

- (12) In case of an even number of observations which of the following is median?
 a. Any of the two middle-most value
 b. The simple average of these two middle values
 c. The weighted average of these two middle values

d. Any of these

MTP May 20

- (13) Two variables x and y are given by $y = 2x - 3$. If the median of x is 20, what is the median of y ?
 a. 20 b. 40
 c. 37 d. 35

MTP Nov 20

- (14) Quartile can be determined graphically using
 a. Ogive
 b. Histogram
 c. Pie-chart
 d. Frequency polygon

MTP Apr 21

- (15) The point of intersection of less than ogive and greater than ogive curve gives us
 ☆
 a. Mean b. Mode
 c. Median d. H.M

MTP Apr 21

- (16) The median of data 13, 8, 11, 6, 4, 15, 2, 18 is
 a. 5 b. 8
 c. 11 d. 9.5

MTP Apr 21

- (17) What is the value of the first quartile for observations 15, 18, 10, 20, 23, 28, 12, 16?
 a. 17 b. 16
 c. 12.75 d. 12

MTP Nov 21

- (18) Find D_c for the following observations. 7, 9, 5, 4, 10, 15, 14, 18, 6, 20
 a. 11.40 b. 12.40
 c. 13.40 d. 13.80

MTP Oct 21

- (19) The median of 27, 30, 26, 44, 42, 51, 37 is
 a. 30 b. 42
 c. 44 d. 37

MTP March 22

- (20) The median value of the set of observations 48, 36, 72, 87, 19, 66, 56 and 91
 a. 53 b. 87
 c. 61 d. 19

MTP June 22/ MTP Sep 24 I

- (21) The first Quartile is 142 and Semi-Inter Quartile Range is 18, then the value of Median is:
 ☆
 a. 151 b. 160
 c. 178 d. None of these

MTP Dec 22 - Series I

- (22) Calculate the value of 3rd quartile from the following data 40, 35, 51, 21, 25, 16, 29, 27, 32

- a. 37.50
b. 30.25
c. 25
d. 35

MTP Dec 22 Series II

(23) Which of the following is positional average?

- a. Median
b. GM
c. HM
d. AM

MTP Dec 22 Series II

(24) For the distribution, calculate Median

| | | | | | | |
|---|---|---|----|----|----|---|
| X | 1 | 2 | 3 | 4 | 5 | 6 |
| F | 6 | 9 | 10 | 14 | 12 | 8 |

- a. 3.5
b. 3
c. 4
d. 5

MTP June 2023 Series I

(25) The relationship between two variable x and y is given by $4x - 10y = 20$. If the median value of the variable x is 20 then what is median value of variable y ?

- a. 1.0
b. 2.0
c. 3.0
d. 6.0

MTP June 2023 Series I

(26) The median of the observations 42, 72, 35, 92, 67, 85, 72, 81, 51, 56 is

- a. 69.5
b. 72
c. 64
d. 61.5

MTP Dec 2023 Series II / MTP Sep 24 I

(27) The median of following numbers, which are given in ascending order is 25. Find the value of x . 11, 13, 15, 19, $(x+2)$, $(x+4)$, 30, 35, 39, 46

- a. 22
b. 20
c. 15
d. 30

MTP Dec 2023 Series II / MTP Sep 24 I

(28) The third decile for the numbers 15, 10, 20, 25, 18, 11, 9 and 12 is

- a. 13
b. 10.70
c. 11
d. 11.50

MTP June 24 Series II

(29) If the r 'ship between x and y is $4x - 6y = 13$ & median of x is 16. Find median of y .

- a. 7.50
b. 8
c. 8.50
d. None of these

MTP June 24 Series II

(30) Find Q_1 for the following observations:

- 7, 9, 5, 4, 10, 15, 14, 18, 6, 20
a. 4.75
b. 5.25
c. 5.75
d. 6.25

MTP June 24 Series II

(31) The wages of 8 workers expressed in rupees are 42, 45, 49, 38, 56, 54, 55, 47. Find median wage?

- a. 47
b. 48
c. 49
d. 50

Answer Key

- | | | |
|------|------|------|
| 1 c | 2 b | 3 b |
| 4 c | 5 b | 6 b |
| 7 b | 8 c | 9 b |
| 10 c | 11 c | 12 b |
| 13 c | 14 a | 15 c |
| 16 d | 17 c | 18 b |
| 19 d | 20 c | 21 b |
| 22 a | 23 a | 24 c |
| 25 d | 26 c | 27 a |
| 28 b | 29 c | 30 c |
| 31 b | | |

Mode, GM, HM

Past Year Questions

PYQ Nov. 19

(1) Find the mode of the following data:

| | | | | | | |
|-------|-----|-----|------|-------|-------|-------|
| Class | 3-6 | 6-9 | 9-12 | 12-15 | 15-18 | 18-21 |
| Freq. | 2 | 5 | 10 | 23 | 21 | 12 |

- a. 25
b. 4.6
c. 14.6
d. 13.5

PYQ Nov. 19

(2) Histogram is used to represent

- a. Mode
b. Median
c. Percentile
d. Quartile

PYQ Nov. 19

(3) Find the mode of the following:

| | | | | | |
|------|-------|-------|-------|-------|-------|
| 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 |
| 7 | 14 | 22 | 34 | 20 | 19 |

- a. 32
b. 34.61
c. 25.42
d. 35

PYQ Jan. 21

(4) From the record on sizes of shoes sold in a shop, one can compute the following to determine the most preferred shoe size.

- a. Mean
b. Median
c. Mode
d. Range

PYQ Jan. 21

(5) If $y = 3 + (4.5)x$ and the mode for x - value is 20, then the mode for y - value is

- a. 3.225
b. 12
c. 24.5
d. 93

PYQ July 21

(6) If $y = 3 + 1.9x$, and mode of x is 15, then the mode of y is:

- a. 15.9 b. 27.8
c. 35.7 d. 31.5

PYQ Dec. 21

(7) One hundred participants expressed their opinion on recommending a new product to their friends using the attributes : most unlikely, not sure, likely, most likely. The appropriate measure of central tendency that can be used here is

- a. Mean
b. Mode
c. Geometric mean
d. Harmonic mean

PYQ Nov. 18

(8) The Geometric mean of 3, 6, 24 and 48 is

- a. 8 b. 12
c. 24 d. 6

PYQ July 21

(9) Expenditures of a company (in million rupees) per item in various years

| Year | Item of expenditures | | | | |
|------|----------------------|---------------|-------|---------------|-------|
| | Salary | Fuel & Trans. | Bonus | Int. on Loans | Taxes |
| 1998 | 288 | 98 | 3.00 | 23.4 | 83 |
| 1999 | 342 | 112 | 2.52 | 32.5 | 108 |
| 2000 | 324 | 108 | 3.84 | 41.6 | 74 |
| 2001 | 336 | 133 | 3.68 | 36.4 | 88 |
| 2002 | 420 | 142 | 3.96 | 49.4 | 98 |

What is the avg. interest per year which the company had to pay during this period?

- a. 33.66 b. 36.66
c. 31.66 d. 39.66

PYQ Dec. 21

(10) If two variables a and b are related by $c = ab$ then G.M. of c is equal to

- a. G.M of $a +$ G.M. of b
b. G.M. of $a \times$ G.M. of b
c. G.M. of $a -$ G.M. of b
d. G.M. of $a /$ G.M. of b

PYQ Nov. 20

(11) Given the weights for the numbers 1, 2, 3 n are respectively $1^2, 2^2, 3^2, \dots, n^2$ then weighted HM is _____

- a. $\frac{2n+1}{4}$
b. $\frac{2n+1}{6}$

c. $\frac{2n+1}{3}$

d. $\frac{2n+1}{2}$

PYQ Nov. 20

(12) The harmonic mean A and B is $1/3$ and harmonic mean of C and D is $1/5$. The harmonic mean of ABCD is

- a. $8/15$ b. $1/4$
c. $1/15$ d. $5/3$

PYQ Nov. 20

(13) A fire engine rushes to a place of fire accident with a speed of 110 kmph and after the completion of operation returned to the base at a speed of 35 kmph. The average speed per hour in per-direction is obtained as _____ speeds.

- a. Average of
b. HM of
c. GM of
d. Half of HM of

PYQ Jan. 21

(14) If there are two groups with n_1 and n_2 observations and H_1 and H_2 are respective harmonic means, then the harmonic mean of combined observation is

- a. $\frac{n_1 H_1 + n_2 H_2}{n_1 + n_2}$
b. $\frac{n_1 H_1 + n_2 H_2}{H_1 + H_2}$
c. $\frac{n_1 + n_2}{n_1 H_1 + n_2 H_2}$
d. $\frac{(n_1 + n_2) H_1 H_2}{n_1 H_2 + n_2 H_1}$

PYQ Jun 23

(15) Find the mode of the following data:

| X | F(x) |
|-------|------|
| 25-30 | 20 |
| 30-35 | 53 |
| 35-40 | 42 |
| 40-45 | 42 |
| 45-50 | 41 |
| 50-55 | 43 |

- a. 31.75 b. 30.75
c. 33.75 d. 35.75

PYQ June 23

- (166) Geometric Mean of 3, 7, 11, 15, 24, 28, 30, 0 is
- a. 6
b. 0
c. 9
d. 12

PYQ June 24

- (17) If the arithmetic mean of two numbers is 10 and the geometric mean is 6, then the difference in the numbers is
- a. 12
b. 14
c. 16
d. 8

Answer Key

| | | |
|------|------|------|
| 1 c | 2 a | 3 b |
| 4 c | 5 d | 6 d |
| 7 b | 8 b | 9 b |
| 10 b | 11 c | 12 b |
| 13 b | 14 d | 15 c |
| 16 b | 17 c | |

Mode, GM, HM

Mock Test Paper Questions

MTP May 19

- (1) If x and y are related by $x - y - 10 = 0$ and mode of x is known to be 23, then the mode of y is
- a. 20
b. 13
c. 3
d. 23

MTP Oct 21/ MTP Sep 24 II

- (2) If x and y are related by $x - y - 10 = 0$ and mode of x is known to be 23, then the mode of y is
- a. 20
b. 13
c. 3
d. 23

MTP Nov 18

- (3) The Geometric mean of the series $1, k, k^2, k^3, \dots, k^n$ where k is constant is
- a. $k^{\frac{(n+1)}{2}}$
b. $k^{n+0.5}$
c. k^{n+1}
d. k^{n+2}

MTP March 21

- (4) G.M is a better measure than others when,
- ☆ a. Ratios and percentages given
b. Interval of scale is given
c. Both (a) and (b)
d. Either (a) or (b)

MTP March 22

- (5) If two variables a and b are related by $c = ab$ then GM. of $c =$
- a. GM of $a +$ GM of b
b. GM of $a \times$ GM of b
c. GM of $a -$ GM of b
d. GM of $a /$ GM of b

MTP June 22

- (6) Geometric Mean of 8, 4, 2 is
- a. 4
b. 2
c. 8
d. none of these

MTP Dec 22 - Series I

- (7) The geometric mean of three numbers 40, 50, and x is 10, and the value of x is
- ☆ a. 5
b. 4
c. 2
d. $1/2$

MTP May 18

- (8) A man travels from Delhi to Agra at an average speed of 30 km per hour and back at an average speed of 60 km per hour. What's the average speed.
- a. 48 km/hr
b. 40 km/hr
c. 45 km/hr
d. 35 km/hr

MTP Nov 19

- (9) A person travels from A to B at the rate of 20 km/hr. and from B to A at the rate of 30 km/hr. What is the average rate of whole journey?
- a. 30 km/hr.
b. 24 km/hr.
c. 35 km/hr.
d. None of these

MTP Nov 20

- (10) If there are two groups with 75 and 65 as harmonic means containing 15 and 13 observation, then combined HM is given by
- a. 70
b. 72.25
c. 78
d. 76

MTP March 21

- (11) A man travels at a speed of 20 km/hr and then returns at a speed of 30 km/hr. His average speed of the whole journey is:
- a. 25 km/hr
b. 24.5 km/hr
c. 24 km/hr
d. None

MTP March 21

- (12) If there are two groups with 75 and 65 as harmonic means and containing 15 and 13 observations. Then the combined H.M. is given by:
- a. 70
b. 80
c. 70.35
d. 69.48

MTP Oct 21

- (13) If there are two groups with 75 and 65 as harmonic means and containing 15 and 13 observations, then the combined HM is given by
- a. 65 b. 70.36
c. 70 d. 71

MTP Dec 22 – Series I

- (14) A train covered the first 5 km of its journey at a speed of 30km/hr. and the next 15 km at a speed of 45 km/hr. The average speed of the train was:
- ☆ a. 38 km/hr. b. 40 km/hr.
c. 36 km/hr. d. 42 km/hr.

MTP June 2023 Series I

- (15) Mode is:
- a. Least frequent value
b. Middle Most value
c. Most frequent Value
d. None of these

MTP June 2023 Series II

- (16) A shopkeeper wants to place an order for t-shirts with the wholesaler based on past sales data. The size he orders will be decided looking at the _____ of past sales data?
- a. Mean
b. Median
c. Mode
d. None of the above

MTP Dec 23 – Series I

- (17) The Harmonic mean H of two numbers is 4 and their arithmetic means A and the geometric mean G satisfy eq. $2A + G^2 = 27$, the numbers are
- ☆ a. (1,3) b. (9,5)
c. (6,3) d. (12,7)

MTP Dec 23 – Series II

- (18) The harmonic mean of $1, 1/2, 1/3, \dots, 1/n$ is
- a. $1/(n+1)$ b. $2/(n+1)$
c. $(n+1)/2$ d. $1/(n-1)$

MTP June 24 Series I

- (19) The rate of returns from three different shares are 100%, 200% and 400% respectively. The average rate of return will be.
- a. 350% b. 233.33%
c. 200% d. 300%

MTP June 24 Series III

- (20) A man travels from Delhi to Agra at an average speed of 30km per hour and back at an average speed of 60 km per hour. What's the average Speed.
- a. 48 Km/ hr b. 40 km/hr
c. 45 km/hr d. 35 km/hr

Answer Key

| | | |
|------|------|------|
| 1 b | 2 b | 3 a |
| 4 a | 5 b | 6 a |
| 7 d | 8 b | 9 b |
| 10 a | 11 c | 12 a |
| 13 c | 14 b | 15 c |
| 16 c | 17 c | 18 b |
| 19 c | 20 a | |

Other Central Tendency Problems

Past Exam Questions

PYQ May 18

- (1) Relation between mean, median and mode is
- a. $\text{mean} - \text{mode} = 2(\text{mean} - \text{median})$
b. $\text{mean} - \text{median} = 3(\text{mean} - \text{mode})$
c. $\text{mean} - \text{median} = 2(\text{mean} - \text{mode})$
d. $\text{mean} - \text{mode} = 3(\text{mean} - \text{median})$

PYQ Nov. 18

- (2) If in a moderately skewed distribution, the values of mode and mean are 32.1 and 35.4 respectively, then the value of the median is
- a. 34.3 b. 33.3
c. 34 d. 33

PYQ June 19

- (3) In a moderately skewed distribution the values of mean & median are 12 & 8 respectively. The value of mode is
- a. 0 b. 12
c. 15 d. 30

PYQ June 19

- (4) For a symmetric distribution
- a. $\text{Mean} = \text{Median} = \text{Mode}$
b. $\text{Mode} = 3 \text{ Median} = 2 \text{ Mean}$
c. $\text{Mode} = \frac{1}{3} \text{ Median} = \frac{1}{2} \text{ Mean}$
d. None of these

PYQ Nov. 19

- (5) If the AM & GM of two numbers are 30 and 24 respectively. Find the no's.
- a. 12 and 24 b. 48 and 12
c. 30 and 20 d. 40 and 20

PYQ Nov. 20

- (6) If the AM and HM of two numbers are 6 and 9 respectively, then GM is
- a. 7.35 b. 8.5
c. 6.75 d. None of these

- PYQ Dec. 21**
- (7) If the AM and GM for 10 observations are both 15, then the value of HM is
- Less than 15
 - More than 15
 - 15
 - Cannot be determined

- PYQ Dec. 21**
- (8) For a moderately skewed distribution, the median is twice the mean, then mode is $\frac{1}{3}$ times the median.
- 3
 - 2
 - $\frac{2}{3}$
 - $\frac{3}{2}$

- PYQ Dec. 21**
- (9) Given that mean = 70.20 and mode = 70.50, the Median is expected to be.
- 70.15
 - 70.20
 - 70.30
 - 70.35

- PYQ Dec 22**
- (10) If mean (\bar{X}) is = 10 and mode (Z) is = 7, then find out the value of median (M)?
- 9
 - 17
 - 3
 - 4.33

- PYQ Dec 22**
- (11) If Arithmetic Mean and Geometric Mean between two numbers are 5 and 4 respectively, then these numbers are:
- 2 & 3
 - 2 & 8
 - 4 & 6
 - 1 & 16

- PYQ Dec 22**
- (12) If Arithmetic mean between two numbers is 5 and Geometric mean is 4 then what is the value of Harmonic mean?
- 3.2
 - 3.4
 - 3.5
 - 3.6

- PYQ Jun 23**
- (13) For a moderately skewed distribution of marks in statistics for a group of 200 students, the mean marks and median marks are 55.60 and 52.40, respectively. What are the modal marks?
- 54.43
 - 48
 - 53.56
 - 46

- PYQ Jun 23**
- (14) If the mean of two numbers is 30 and geometric mean is 24, then what will be the Harmonic mean of two numbers?
- 19.2
 - 21.8
 - 22.3
 - 18.4

- PYQ Dec 23**
- (15) The AM and HM of two numbers are 5 and 3.2 respectively, then GM will be:
- 4.4
 - 4.2
 - 4.0
 - 3.8

- PYQ Dec 23**
- (16) If mode of a grouped data is 10 and median is 6, then what is the value of mean?
- 2
 - 4
 - 6
 - 8

- PYQ Dec 23**
- (17) If A.M and G.M of two positive numbers a and b are 12 and 12, respectively, find the numbers
- 18 and 6
 - 15 and 9
 - 16 and 8
 - 12 and 12

- PYQ Dec 23**
- (18) If the mean and median of a moderately asymmetrical series are 26.8 and 27.9 respectively, then the most probable mode is:
- 35.4
 - 30.1
 - 34.3
 - 70.8

- PYQ June 24**
- (19) If Mean of a data set is 22 and Median is 22.33 then Mode is
- 21
 - 21.34
 - 22.99
 - 21.54

- PYQ June 24**
- (20) According to the empirical rule, if the data form a "bell-shaped" distribution, then the maximum and minimum frequencies occur at _____ and _____ respectively
- Middle, left end
 - Middle, right end
 - End, middle
 - Middle, ends

- PYQ Sep 24**
- (21) If the mean and median of a moderately asymmetrical series are 70.8 and 68.6 respectively, then the most probable mode is:
- 75.2
 - 64.2
 - 63.4
 - 72.5

- PYQ Sep 24**
- (22) For a moderately-skewed distribution, which of the following relationship holds?
- Median - Mode = 3 (Mean - Median)
 - Mean - Mode = 3 (Mean - Median)
 - Mean - Median = 3 (Mean - Mode)
 - Mean - Median = 3 (Median - Mode)

Answer Key

| | | |
|------|------|------|
| 1 d | 2 a | 3 a |
| 4 a | 5 b | 6 a |
| 7 c | 8 b | 9 c |
| 10 a | 11 b | 12 a |
| 13 d | 14 a | 15 c |
| 16 b | 17 d | 18 b |
| 19 c | 20 d | 21 b |
| 22 b | | |

Other Central Tendency Problems

Mock Test Paper Questions

MTP May 18

- (1) If the arithmetic mean between two numbers is 64 and the Geometric Mean between them is 16. The Harmonic mean between them is ____
- a. 64 b. 4
c. 16 d. 40

MTP May 18

- (2) When the mean is 3.57 and mode is 2.13, then the value of median is ____
- a. 3.09 b. 5.01
c. 5.01 d. none of these

MTP Nov 18

- (3) The relationship between Mean, Median & Mode
- a. Mean-Mode = 3(Mean-Median)
b. Mode = 2 Median - 3 Median
c. Median- Mode = 3 (Median-mean)
d. none of these

MTP Nov 18

- (4) Relationship between AM, GM, and HM
- a. $GM \geq AM \geq HM$
b. $AM \geq GM \geq HM$
c. $HM \geq AM \geq GM$
d. none of these

MTP May 19

- (5) For a moderately skewed distribution, which is true
- a. Mean - Mode = 3 (Mean - Median)
b. Median - Mode = 3 (Mean - Median)
c. Mean - Median = 3 (Mean - Mode)
d. Mean - Median = 3 (Median - Mode)

MTP May 19

- (6) Which of the following results hold for a set of distinct positive observations?
- a. $AM \geq GM \geq HM$
b. $HM \geq GM \geq AM$

- c. $AM > GM > HM$
d. $GM > AM > HM$

MTP May 19 Series II

- (7) For a moderately skewed distribution, which of the following relationship holds?
- a. Mean - Mode = 3 (Mean - Median)
b. Median - Mode = 3 (Mean - Median)
c. Mean - Median = 3 (Mean - Mode)
d. Mean - Median = 3 (Median - Mode)

MTP May 20

- (8) For a moderately skewed distribution, which of the following relationship holds?
- a. Mean - Mode = 3 (Mean - Median)
b. Median - Mode = 3 (Mean - Median)
c. Median - Mode = 3 (Mean - Median)
d. Mean - Median = 3 (Median - Mode)

MTP March 21

- (9) If the A.M. and H.M. for two numbers are 5 and 3.2 respectively then the G.M. will be:
- a. 4.05 b. 16
c. 4 d. 4.10

MTP Apr 21

- (10) Which of the following statements is true?
- a. Usually mean is the best measure of central tendency.
b. Usually median is the best measure of central tendency.
c. Usually mode is the best measure of central tendency.
d. Normally, GM is the best measure of central tendency

MTP Apr 21

- (11) When mean is 3.57 and mode is 2.13 then the value of the median is
- a. 3.09 b. 5.01
c. 4.01 d. None of these

MTP Apr 21

- (12) The A.M and H.M for two numbers are 5 and 3.2 respectively then the G.M will be
- a. 4.05 b. 16
c. 4 d. 4.10

MTP Nov 21

- (13) Which of the following is not a criteria for ideal measure of central tendency?
- a. It should be ambiguously defined
b. It should be simple to compute
c. It should be based on all the observations
d. None of these

MTP Nov 21

(14) ★ If the rates return from three different shares are 100%, 200% and 400% respectively. The average rate of return will be.

- a. 350% b. 233.33%
c. 200% d. 300%

MTP Nov 21

(15) Find the two numbers if AM and GM is 10 and 6 respectively.

- a. 6, 6 b. 12, 8
c. 9, 4 d. 18, 2

MTP March 22

(16) For moderately skewed distribution, the median is twice the mean, then mode is _____ times the median.

- a. 3 b. 2
c. $\frac{2}{3}$ d. $\frac{3}{2}$

MTP March 22

(17) If the Arithmetic mean between two numbers is 64 and the Geometric mean between them is 16. The Harmonic Mean between them is _____.

- a. 64 b. 4
c. 16 d. 40

MTP June 22

(18) When mean is 3.57 and mode is 2.13 then the value of median is

- a. 3.09 b. 5.01
c. 4.01 d. None of these

MTP June 22

(19) ★ If the difference between mean and mode is 33, then the difference between Mean and Median will be _____.

- a. 63 b. 31.5
c. 11 d. None of these

MTP Dec 22 - Series I

(20) ★ If the difference between Mean and Mode is 69, then the difference between Mean and Median will be _____.

- a. 63 b. 31.5
c. 23 d. None of these

MTP Dec 22 Series II

(21) In a moderately skewed distribution the values of mean and median are 12 and 8 respectively. The value of mode is:

- a. 0 b. 12
c. 15 d. 30

MTP Dec 22 Series II

(22) For a symmetric distribution:
a. Mean = Median = Mode

- b. Mode = 3 Median - 2 Mean
c. Mode = $\frac{1}{3}$ Median = $\frac{1}{2}$ Mean
d. None

MTP June 2023 Series I

(23) If mean (\bar{x}) is = 10 and mode (Z) is = 7, then find out the value of median (M)

- a. 9
b. 17
c. 3
d. 4.33

MTP June 2023 Series I

(24) If Arithmetic mean between two numbers is 5 and Geometric mean is 4 then what is the value of Harmonic mean?

- a. 3.2
b. 3.4
c. 3.5
d. 3.6

MTP June 2023 Series II

(25) AM and GM are both negative values, HM is =

- a. $H = \frac{G}{A^2}$
b. $H = \frac{G^2}{A}$
c. $H = \frac{G^2}{\sqrt{A}}$
d. None

Note: Que is wrong.

MTP June 2023 Series II

(26) ★ Which of the following is the correct relation between mean, median and mode

- a. Median = mode + $\frac{2}{3}$ (mean - mode)
b. 2Mean = Mode - 3Median
c. 2Mean = Mode + 3Median
d. Mode = 3Median + 2Mean

MTP Dec 22 Series I

(27) If the mode of a data is 18 and mean is 24, then median is

- a. 18 b. 24
c. 22 d. 21

MTP Dec 2023 Series II

(28) For a moderately skewed distribution, which of the following relationship is correct

- a. Mean - Mode = 3 (Mean - Median)
b. Median - Mode = 3 (Mean - Median)
c. Mean - Median = 3 (Mean - Mode)
d. Mean - Median = 3 (Median - Mode).

MTP Dec 23 Series II

- (29) The mode of data is 18 and mean is 24, then median is
- a. 18 b. 24
c. 22 d. 21

MTP June 24 Series I

- (30) Find the numbers whose GM is 5 and AM is 7.5:
- a. 12 and 13 b. 13.09 and 1.91
c. 14 and 11 d. 17 and 19

MTP June 24 Series I

- (31) For a moderately skewed distribution, which of the following relationship holds?
- a. Mean - Median = 3 (Median - Mode)
b. Median - Mode = 3 (Mean - Median)
c. Mean - Mode = 3 (Mean - Median)
d. Mean - Median = 3 (Mean - Mode)

MTP June 24 Series I

- (32) If the difference between mean and mode is 69, then the difference between Mean and Median will be _____
- a. 63 b. 31.5
c. 23 d. None of these

MTP June 24 Series II

- (33) Which of the following result hold for a set of distinct positive observations?
- a. A.M. > G.M. > H.M.
b. G.M. > A.M. > H.M.
c. G.M. > A.M. > H.M.
d. G.M. > A.M. > H.M.

MTP June 24 Series II

- (34) _____ & _____ are called ratio averages:
- a. H.M & G.M b. H.M. & A.M
c. A.M. & G.M. d. None of these

MTP June 24 Series II

- (35) The Arithmetic Mean between two numbers is 15 and their G.M. is 9; then the numbers are -
- a. 27, 3 b. 9, 9
c. 16, 9 d. None of these

MTP June 24 Series III

- (36) If the arithmetic mean between two numbers is 64 and the Geometric Mean between them is 16. The Harmonic mean between them is
- a. 64 b. 4
c. 16 d. 40

MTP June 24 Series III

- (37) When the mean is 3.57 and mode is 2.13, then the value of median is _____
- a. 3.09 b. 5.01
c. 5.01 d. None of these

MTP Sep 24 Series I & II

- (38) If the mode of a data is 18 and mean is 24, then median is
- a. 18 b. 24
c. 22 d. 21

MTP Sep 24 Series I

- (39) The HM, H of two numbers is 4 and their AM, \star A and the GM, G satisfy the equation $2A + G^2 = 27$, the numbers are:
- a. (1,3) b. (9,5)
c. (6,3) d. (12,7)

Answer Key

| | | |
|------|------|------|
| 1 b | 2 a | 3 a |
| 4 b | 5 a | 6 c |
| 7 a | 8 a | 9 c |
| 10 a | 11 a | 12 c |
| 13 a | 14 c | 15 d |
| 16 b | 17 b | 18 a |
| 19 c | 20 c | 21 a |
| 22 a | 23 a | 24 a |
| 25 b | 26 a | 27 c |
| 28 a | 29 c | 30 b |
| 31 c | 32 c | 33 a |
| 34 a | 35 a | 36 a |
| 37 a | 38 c | 39 c |

Range

Post Exam Questions

PYQ Nov. 18

- (1) If the range of a set of values is 65 and maximum value in the set is 83, then the minimum value in the set is
- a. 74 b. 9
c. 18 d. None of these

PYQ Nov. 19

- (2) Difference between upper limit and lower limit of a class is known as.
- a. Range
b. Class mark
c. Class size
d. Class boundary

MTP Dec 23 Series II

- (29) The mode of data is 18 and mean is 24, then median is
 a. 18 b. 24
 c. 22 d. 21

MTP June 24 Series I

- (30) Find the numbers whose GM is 5 and AM is 7.5:
 a. 12 and 13 b. 13.09 and 1.91
 c. 14 and 11 d. 17 and 19

MTP June 24 Series I

- (31) For a moderately skewed distribution, which of the following relationship holds?
 a. Mean - Median = 3 (Median - Mode)
 b. Median - Mode = 3 (Mean - Median)
 c. Mean - Mode = 3 (Mean - Median)
 d. Mean - Median = 3 (Mean - Mode)

MTP June 24 Series I

- (32) If the difference between mean and mode is 69, then the difference between Mean and Median will be _____
 a. 63 b. 31.5
 c. 23 d. None of these

MTP June 24 Series II

- (33) Which of the following result hold for a set of distinct positive observations?
 a. A.M. > G.M. > H.M.
 b. G.M. > A.M. > H.M.
 c. G.M. > A.M. > H.M.
 d. G.M. > A.M. > H.M.

MTP June 24 Series II

- (34) _____ & _____ are called ratio averages:
 a. H.M & G.M b. H.M. & A.M
 c. A.M. & G.M. d. None of these

MTP June 24 Series II

- (35) The Arithmetic Mean between two numbers is 15 and their G.M. is 9; then the numbers are -
 a. 27, 3 b. 9, 9
 c. 16, 9 d. None of these

MTP June 24 Series III

- (36) If the arithmetic mean between two numbers is 64 and the Geometric Mean between them is 16. The Harmonic mean between them is
 a. 64 b. 4
 c. 16 d. 40

MTP June 24 Series III

- (37) When the mean is 3.57 and mode is 2.13, then the value of median is _____
 a. 3.09 b. 5.01
 c. 5.01 d. None of these

MTP Sep 24 Series I & II

- (38) If the mode of a data is 18 and mean is 24, then median is
 a. 18 b. 24
 c. 22 d. 21

MTP Sep 24 Series I

- (39) The HM, H of two numbers is 4 and their AM, \star A and the GM, G satisfy the equation $2A + G^2 = 27$, the numbers are:
 a. (1,3) b. (9,5)
 c. (6,3) d. (12,7)

Answer Key

| | | |
|------|------|------|
| 1 b | 2 a | 3 a |
| 4 b | 5 a | 6 c |
| 7 a | 8 a | 9 c |
| 10 a | 11 a | 12 c |
| 13 a | 14 c | 15 d |
| 16 b | 17 b | 18 a |
| 19 c | 20 c | 21 a |
| 22 a | 23 a | 24 a |
| 25 b | 26 a | 27 c |
| 28 a | 29 c | 30 b |
| 31 c | 32 c | 33 a |
| 34 a | 35 a | 36 a |
| 37 a | 38 c | 39 c |

Range

Past Exam Questions

PYQ Nov. 18

- (1) If the range of a set of values is 65 and maximum value in the set is 83, then the minimum value in the set is
 a. 74 b. 9
 c. 18 d. None of these

PYQ Nov. 19

- (2) Difference between upper limit and lower limit of a class is known as.
 a. Range
 b. Class mark
 c. Class size
 d. Class boundary

PYQ Jan. 21

- (3) The relationship between P-series and Q-series is given by $2P - 3Q - 10 = 0$. If the range of P-series is 18. What would be the range of Q?

a. 10
b. 15
c. 9
d. 12

PYQ July 21

- (4) If the relationship between x and y is given by $2x + 3y = 10$ and the range of y is 10, then what is the range of x?

a. 10
b. 18
c. 8
d. 15

PYQ Dec. 21

- (5) The marks secured by 5 students in a subject are 82, 73, 69, 84, 66. What is the coefficient of Range

a. 0.12
b. 12
c. 120
d. 0.012

PYQ Dec. 23

- (6) If the range of data is 20 and its smallest value is 5, then what is the largest value of data is?

a. 20
b. 25
c. 5
d. 30

PYQ Dec. 23

- (7) If the range of data is 20 and its smallest value is 5, then what is the largest value of data is?

a. 20
b. 25
c. 5
d. 30

PYQ Sep 24

- (8) What is the coefficient of range for the observations 20, 28, 32, 41, 48, 60?

a. 20
b. 50
c. 40
d. 200

PYQ Sep 24

- (9) What is the range of a data set?

a. The difference between the mean and median of the data set
b. The difference between the highest and lowest values in the data set
c. The number of data points in the data set
d. The standard deviation of the data set

Answer Key

1 c 2 c 3 d
4 d 5 b 6 b
7 b 8 b 9 b

Range

Mock Test Paper Questions

MTP May 18

- (1) If the range of x is 2, find range of $-3x + 50$?

a. 2
b. 6
c. -6
d. 44

MTP May 19

- (2) The range of 15, 12, 10, 9, 17, 20 is

a. 5
b. 12
c. 13
d. 11

MTP May 19 Series II

- (3) The range of 15, 12, 10, 9, 17, 30 is

a. 5
b. 12
c. 13
d. 21

MTP May 19 Series II

- (4) If the range of x is 2, find range of $-3x + 50$?

a. 2
b. 6
c. -6
d. 44

MTP May 20

- (5) If R_x and R_y denote ranges of x and y respectively where x and y are related by $3x + 2y + 10 = 0$, what would be the relation between x and y?

a. $R_x = R_y$
b. $2R_x = 3R_y$
c. $3R_x = 2R_y$
d. $R_x = 2R_y$

MTP Nov 20

- (6) The range of 28, 22, 40, 20, 15, 50 is

a. 40
b. 22
c. 35
d. None of these

MTP Mar 21, MTP Apr 21

- (7) What is the coefficient of range for below:

| Class | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 |
|-------|-------|-------|-------|-------|-------|
| Freq. | 11 | 25 | 16 | 7 | 3 |

a. 22
b. 50
c. 75.82
d. 72.46

MTP June 2023 Series I

- (8) Which of the following is a correct statement?

a. Range is unaffected by the change in origin or change in scale
b. Range is affected by the change in origin or change in scale
c. Range is unaffected by the change in origin but affected by change in scale
d. Range is affected by the change in origin but unaffected by change in scale

MTP Nov 20 Series II

- (9) If R_x and R_y denote ranges of x and y respectively where x and y are related by $4x + 5y + 12 = 0$, what would be the relation between R_x and R_y ?
- a. $R_x = R_y$ b. $4R_x = 5R_y$
 c. $5R_x = 4R_y$ d. None of these

MTP June 24 Series II

- (10) _____ is an absolute measure of dispersion.
- a. Range
 b. Mean Deviation
 c. Standard Deviation
 d. All of the above

MTP Nov 20 Series II

- (11) If the range of x is 2, find range of $-3x + 50$?
- a. 2 b. 6
 c. -6 d. 44

Answer Key

| | | |
|------|------|-----|
| 1 b | 2 d | 3 d |
| 4 b | 5 c | 6 c |
| 7 d | 8 c | 9 b |
| 10 d | 11 b | |

Mean Deviation

Past Exam Questions

PYQ Nov. 20

- (1) Which of the following measure of dispersion is based on absolute deviations?
- a. Range
 b. S. D
 c. Mean deviation
 d. Quartile deviation

PYQ Jan. 21

- (2) Find the coefficient of mean deviation about mean for the data: 5, 7, 8, 10, 11, 13, 19
- a. 17.28 b. 28.57
 c. 32.11 d. 18.56

PYQ July 21

- (3) If a school has 14 teachers, their heights (in cm) are: 172, 173, 164, 178, 168, 169, 173, 172, 173, 164, 178, 168, 169, 173 then average deviation of this data is:
- a. 2.43 approx. b. 3.93 approx.
 c. 3.43 approx. d. 2.92 approx.

PYQ July 21

- (4) The probable value of mean deviation when $Q_3 = 40$ and $Q_1 = 15$ is:
- a. 15 b. 18.75
 c. 17.50 d. 0

PYQ July 21

- (5) If every observation is increased by 7 then:
- a. Standard deviation increased by 7
 b. Mean deviation increased by 7
 c. Not affected at all
 d. Quartile deviation increased by 7.

PYQ July 21

- (6) The mean deviation of the numbers 3, 10, 6, 11, 14, 17, 9, 8, 12 about the mean is:
- a. 8.7 b. 4.2
 c. 3.1 d. 9.8

PYQ June 22

- (7) Mean Deviation of data 3, 10, 10, 4, 7, 18, 5 from mode is
- a. 4.39 b. 4.70
 c. 4.14 d. 5.24

PYQ June 22

- (8) Which of the below is based on absolute deviation?
- a. Standard deviation
 b. Mean deviation
 c. Range
 d. Quartile deviation

PYQ June 23

- (9) If x and y are related as $4x + 3y + 11 = 0$ and mean deviation of y is 7.20, what is the mean deviation of x ?
- a. 2.7
 b. 7.2
 c. 4.5
 d. 5.4

PYQ June 23

- (10) The mean deviation about the mean for the data 16, 24, 30, 35, 39, 40 is
- a. 9.14
 b. 9.41
 c. 8.91
 d. 9.81

PYQ June 23

- (11) If Mean deviation about Arithmetic Mean is 50.85 and Arithmetic Mean is 3.50 then coefficient Mean deviation about Arithmetic mean is
- a. 50.85 b. 44.33
 c. 52.65 d. 51.85

Answer Key

- | | | |
|------|------|-----|
| 1 c | 2 c | 3 c |
| 4 a | 5 c | 6 c |
| 7 c | 8 b | 9 d |
| 10 a | 11 a | |

Mean Deviation

Mock Test Paper Questions

MTP Nov 18

- (1) The MD about the Mean for the data 6,9,11,10,12,12
- | | |
|---------|---------|
| a. 1.47 | b. 1.57 |
| c. 1.67 | d. 1.87 |

MTP Nov 20

- (2) The mean deviation about Mode for the numbers 4/11, 6/11, 8/11, 9/11, 12/11, 8/11 is
- | | |
|---------|--------|
| a. 9/15 | b. 12 |
| c. 6/11 | d. 1/6 |

MTP Nov 20

- (3) If the relation between x and y is $5y - 3x = 10$ and the mean deviation about mean for x is 12, then the mean deviation of y about mean is
- | | |
|---------|----------|
| a. 9.20 | b. 6.80 |
| c. 7.20 | d. 15.80 |

MTP March 21

- (4) If two variables x and y are related by $2x + 3y - 7 = 0$ and the mean and mean deviation about mean of x are 1 and 0.3 respectively, then the co-efficient of mean deviation of y about mean is:
- | | |
|-------|-------|
| a. -5 | b. 4 |
| c. 12 | d. 50 |

MTP March 21

- (5) The equation of a line is $5x + 2y = 17$. Mean deviation of y about mean is 5. Calculate mean deviation of x about mean.
- | | |
|-------|---------|
| a. -2 | b. 2 |
| c. -4 | d. None |

MTP March 22

- (6) The deviations are minimum when taken from
- | | |
|---------|-----------|
| a. Mean | b. Median |
| c. Mode | d. GM |

MTP June 22

- (7) The sum of squares of the deviations of the given values from their is minimum.
- | |
|--------------------|
| a. Arithmetic Mean |
| b. Median |

- | |
|------------------|
| c. Mode |
| d. None of these |

MTP Dec 22 - Series I

- (8) Which measure of dispersion is based on the absolute deviation only?
- | |
|-----------------------|
| a. Range |
| b. Standard Deviation |
| c. Mean Deviation |
| d. Quartile Deviation |

MTP March 21

- (9) Find the mean deviation about mean for the numbers: 2, 6, 7, 4, 8, 3
- | | |
|------|------|
| a. 4 | b. 6 |
| c. 5 | d. 2 |

MTP Dec 23 Series II

- (10) If the relation between x and y is $4y - 3x = 10$ and the mean deviation about mean for x is 12, then the mean deviation of y about mean is:
- | | |
|---------|------------------|
| a. 9.00 | b. 7.80 |
| c. 12.5 | d. None of these |

MTP June 24 Series I

- (11) If two variables x and y are related by $2X + 3Y - 7 = 0$ and the mean and mean deviation about mean of X are 1 and 0.3 respectively, then the co-efficient of mean deviation of Y about mean is.
- | | |
|-------|-------|
| a. -5 | b. 4 |
| c. 12 | d. 50 |

MTP June 24 Series II

- (12) The relation between two variables is $2x - 3y + 12 = 0$ If mean deviation of y is 6 then mean deviation of x is
- | | |
|------|------------------|
| a. 9 | b. 6 |
| c. 3 | d. None of these |

MTP June 24 Series II

- (13) If two variables x and y are related by $2x$ and $3y - 7 = 0$ and the mean and mean deviation about mean of x are 1 and 0.3 respectively, then the coefficient of mean deviation of y about mean is:
- | | |
|-------|-------|
| a. -5 | b. 4 |
| c. 12 | d. 50 |

Answer Key

- | | | |
|------|------|------|
| 1 c | 2 d | 3 c |
| 4 c | 5 b | 6 b |
| 7 a | 8 c | 9 d |
| 10 a | 11 c | 12 a |
| 13 c | | |

Standard Deviation

Past Exam Questions

PYQ Nov. 19

- (1) If the S.D. of the 1st n natural numbers is $\sqrt{30}$ then the value of n is
 a. 19 b. 20
 c. 21 d. None of these
 PYQ May 18
- (2) If the variance of 5, 7, 9 and 11 is 4, then the coefficient of variation is:
 a. 15 b. 25
 c. 17 d. 19
 PYQ Nov. 18
- (3) Standard Deviation for the marks obtained by a student in monthly test in mathematics (out of 50) as 30, 35, 25, 20, 15 is
 a. 25 b. $\sqrt{50}$
 c. $\sqrt{30}$ d. 50
 PYQ Nov. 18
- (4) If the standard deviation for the marks obtained by a student in monthly test is 36, then variance is
 a. 6 b. 36
 c. 1296 d. None of these
 PYQ Nov. 18
- (5) If $\sigma^2 = 100$ & coefficient of variation = 20% then x
 a. 60 b. 70
 c. 80 d. 50
 PYQ June 19
- (6) S.D of first five consecutive natural numbers is
 a. $\sqrt{10}$ b. $\sqrt{8}$
 c. $\sqrt{3}$ d. $\sqrt{2}$
 PYQ June 19
- (7) If the profits of a company remain same for the last ten months then the S.D. of profits of the company would be:
 a. Positive b. Negative
 c. Zero d. (a) or (c)
 PYQ June 19
- (8) The sum of mean and SD of a series is a + b, if we add 2 to each observation of the series then the sum of mean and SD is
 a. $a + b + 2$ b. $6 - a + b$
 c. $4 + a - b$ d. $a + b + 4$

- (9) Origin is shifted by 5, what will happen
 a. SD will increase by 5
 b. QD will increase by 5
 c. MD will increase by 5
 d. There will be no change in SD
 PYQ Nov. 19

- (10) Coefficient of variation is equal to:
 a. $\frac{SD}{Mean}$
 b. $\frac{SD}{Mean} \times 100$
 c. $\frac{Mean}{SD} \times 100$
 d. $\frac{Mean}{SD}$
 PYQ Nov. 19

- (11) Find SD of the following
 ☆ 1, 2, 3, 4, 5, 6, 7, 8, 9.
 a. 2.58 b. $60/9$
 c. $60/3$ d. 3.20
 PYQ Nov. 19

- (12) If mean = 200 and variance = 80. Find coefficient of variation.
 a. 2.56 b. 4.47
 c. 32 d. 0.32
 PYQ Nov. 19

- (13) Which of the below is affected by shifting of scale.
 a. SD b. MD
 c. QD d. All of these
 PYQ Nov. 19

- (14) Coefficient of variation is 80. Mean is 20. Find variance:
 a. 640 b. 256
 c. 16 d. 250
 PYQ Nov. 19

- (15) SD from numbers 1, 4, 5, 7, 8 is 2.45. If 10 is added to each then SD will be:
 a. 12.45
 b. 24.5
 c. 12
 d. Will not change
 PYQ Jan.

- (16) The best statistical measure used for comparison of two series is
 a. Mean absolute deviation
 b. Range
 c. Coefficient of variation
 d. Standard deviation

- (17) It is given that the mean (\bar{X}) is 10 and standard deviation (s.d.) is 3.2. If the observations are increased by 4, then the new mean and standard deviations are:
- $\bar{X} = 10, \text{s.d.} = 7.2$
 - $\bar{X} = 10, \text{s.d.} = 3.2$
 - $\bar{X} = 14, \text{s.d.} = 3.2$
 - $\bar{X} = 14, \text{s.d.} = 7.2$

PYQ Jan. 21

- (18) The SD of 1 to 9 natural number is:
- 6.65
 - 2.58
 - 6.75
 - 5.62

PYQ July 21

- (19) If the numbers are 5, 1, 8, 7, 2 then the coefficient of variation is:
- 56.13%
 - 59.13%
 - 48.13%
 - 44.13%

PYQ July 21

- (20) AM and Coefficient of variation of x is 10 and 40. What is the variance $30 - 2x$
- 64
 - 56
 - 49
 - 81

PYQ June 22

- (21) Following are the wages of 8 workers 82, 96, 52, 75, 70, 65, 50, 70. Find range and coefficient of range?
- 46, 32.70
 - 43, 31.50
 - 46, 31.50
 - 43, 32.70

PYQ June 22

- (22) Find the standard deviation and coefficient of variation for: 1, 9, 8, 5, 7
- 2.828, 49.32
 - 2.828, 48.13
 - 2.828, 47.13
 - 2.828, 50.13
- (23) If the coefficient of variation and standard deviation are 30 and 12 respectively, then the arithmetic mean of the distribution is:
- 40
 - 36
 - 25
 - 19

PYQ June 22

PYQ Dec 22

- (24) If the sum of square of the values equals to 3390, Number of observations are 30 and Standard deviation is 7, what is the mean value of the above observations?
- 14
 - 11
 - 8
 - 5

PYQ Dec 22

- (25) If the variance of random variable ' x ' is 17, then what is variance of $y = 2x + 5$?
- 34
 - 39
 - 68
 - 78

PYQ Dec 22

- (26) If the variance of given data is 12, and their mean value is 40, what is coefficient of variation (CV)?
- 5.66%
 - 6.66%
 - 7.50%
 - 8.65%

PYQ Dec 22

- (27) In a given set if all data are of same value then variance would be:
- 0
 - 1
 - 1
 - 0.5

PYQ Jun 23

- (28) If the Standard Deviation of data 2, 4, 5, 6, 8, 17 is 4.47, then Standard Deviation of the data 4, 8, 10, 12, 16, 34 is
- 4.47
 - 8.94
 - 13.41
 - 2.24

PYQ Jun 23

- (29) The mean and variance of a group of 100 observations are 8 and 9, respectively. Out of 100 observations, the mean and standard deviation of 60 observations are 10 and 2 respectively. Find the variance of remaining 40 observations?
- 4.5
 - 3.5
 - 2.5
 - 1.5

PYQ Jun 24

- (30) For the first 20 natural numbers the standard deviation is _____
- 5.77
 - 7.75
 - 5.64
 - 6.54

PYQ Jun 24

- (31) If Arithmetic mean and Coefficient of variations of y are 5 and 20 respectively, the variance of $12 - 3y$
- 9
 - 81
 - 3
 - 100

PYQ June 24

- (32) Consider the data sets:
 $X = \{-6, 2, -2, 6\}$, $Y = \{4, 8, 2, 6\}$
 $Z = \{103, 100, 102, 101\}$ Let S_x , S_y , S_z be the standard deviations of the sets X , Y and Z respectively. We have the relations,
- $S_x < S_y < S_z$

- b. $S_z < S_y < S_x$
- c. $S_z < S_x < S_y$
- d. $S_x < S_z < S_y$

PYQ Sep 24

(33) If each observation of a set is divided by 10, then the Standard Deviation of the new observation is:

- a. $\frac{1}{100}$ of SD of original observation
- b. $\frac{1}{10}$ of SD of original observation
- c. 100 of SD of original observation
- d. 10 of SD of original observation

PYQ Sep 24

(34) The Standard Deviation of the series is 3, 6, 9, 12, 15 is:

- a. 6.36
- b. 4.24
- c. 4.12
- d. 3.28

Answer Key

| | | |
|------|------|------|
| 1 a | 2 b | 3 b |
| 4 c | 5 d | 6 d |
| 7 c | 8 a | 9 d |
| 10 b | 11 a | 12 b |
| 13 d | 14 b | 15 d |
| 16 c | 17 c | 18 b |
| 19 b | 20 a | 21 c |
| 22 c | 23 a | 24 c |
| 25 c | 26 d | 27 b |
| 28 b | 29 d | 30 a |
| 31 a | 32 b | 33 b |
| 34 b | | |

Standard Deviation

Mock Test Paper Questions

MTP May 18

- (1) The standard deviation of 25, 32, 43, 53, 62, 59, 48, 31, 24, 33 is
- a. 13.23
 - b. 12.33
 - c. 11.33
 - d. None of these

MTP May 18

- (2) The SD is independent of change of
- a. Origin
 - b. Scale
 - c. Both (a) & (b)
 - d. None of these

MTP May 18

(3) If the mean of frequency distribution is 100 and coefficient of variation is 45% then standard deviation is.

- a. 45
- b. 0.45
- c. 4.5
- d. 450

MTP May 18

(4) If the mean and SD of X are a and b respectively, then the S.D of $\frac{x-a}{b}$ is

- a. a/b
- b. -1
- c. 1
- d. ab

MTP Nov 18

(5) Coefficient of Variation (CV) is calculated

- a. $\frac{SD}{AM} \times 100$
- b. $\frac{AM}{SD} \times 100$
- c. $\frac{AM}{MD} \times 100$
- d. None of these

MTP Nov 18

(6) The SD for the data 6, 9, 10, 3, 7 is

- a. 2.35
- b. 2.45
- c. 2.55
- d. 2.65

MTP May 19

(7) The standard deviation of, 10, 16, 10, 16, 10, 10, 16, 16 is

- a. 4
- b. 6
- c. 3
- d. 0

MTP May 19

(8) If all the observations are multiplied by 2, then

- a. New SD would be also multiplied by 2
- b. New SD would be half of the previous SD
- c. New SD would be increased by 2
- d. New SD would be decreased by 2

MTP May 19 Series II

(9) If the profits of a company remain the same for the last ten months, then the standard deviation of profits for these ten months would be?

- a. Positive
- b. Negative
- c. Zero
- d. A or C

MTP May 19 Series II

(10) If x and y are related by $2x+3y+4 = 0$ and SD of x is 6, then SD of y is

- a. 22
- b. 4
- c. 40
- d. 9

ICAI SM, MTP May 19 Series II

- (11) If x and y are related by $y = 2x + 5$ and the SD and AM of x are known to be 5 and 10 respectively, then the coefficient of variation of y is
- a. 25 b. 30
c. 40 d. 20

MTP Nov 19/ MTP Sep 24 II

- (12) If the SD of x is 3, what is the variance of $(5-x)$?
- a. 36 b. 6
c. 1 d. 9

MTP Nov 19

- (13) If the values of all observations are equal then the Standard Deviation of the given observations is
- a. 0 b. 2
c. 1 d. None of these

MTP Nov 19

- (14) The Standard Deviation of a set of 50 items is 10. Find the Standard Deviation if every item is increased by 5
- a. 15 b. 5
c. 10 d. None of these

MTP Nov 19

- (15) Find the coefficient of variation if the sum of squared deviations taken from mean 40 of 10 observations is 360.
- a. 15 b. 20
c. 40 d. None of these

MTP May 20

- (16) If x and y are related by $2x + 3y + 4 = 0$ and SD of x is 9, then SD of y is
- a. 22 b. 6
c. 5 d. 24

MTP May 20/ MTP Sep 24 II

- (17) If x and y are related by $y = 2x + 5$ and the SD and AM of x are known to be 5 and 10 respectively, then the coefficient of variation of y is
- a. 25 b. 30
c. 40 d. 20

MTP Nov 20

- (18) What is the coefficient of variation of the following numbers 53, 52, 61, 60, 64
- a. 18.09 b. 8.09
c. 12.23 d. 15.45

MTP Nov 20

- (19) The mean and SD for a , b , and 2 are 3 and 1 respectively, the value of ab would be
- a. 11.5 b. 5
c. 12 d. 13

MTP March 21

- (20) If X and Y are two random variables then $v(x+y)$, when x is independent of y
- a. $v(x) + v(y)$
b. $v(x) + v(y) - 2v(x,y)$
c. $v(x) + v(y) + 2v(x,y)$
d. $v(x) - v(y)$

MTP March 21

- (21) The sum of squares of deviation from mean of 10 observations is 250. Mean of the data is 10. Find the coefficient of variation
- a. 10% b. 25%
c. 50% d. 0%

MTP March 21

- (22) If variance of x is 5, then find the variance of $(2-3x)$
- a. 10 b. 45
c. 5 d. -13

MTP March 21

- (23) What is the standard deviation of number recoveries among 48 patients when the probability of recovering is 0.75?
- a. 36 b. 81
c. 9 d. 3

Note: Theoretical Distribution Chapter

MTP Apr 21

- (24) The standard deviation of 10, 16, 10, 16, 10, 10, 16, 16 is
- a. 4 b. 6
c. 3 d. 0

MTP Apr 21

- (25) The variance of the data 3, 4, 5, 8 is
- a. 4.5 b. 3.5
c. 5.5 d. 6.5

MTP Apr 21

- (26) If the profits of a company remains the same for the last ten months, then the standard deviation of profits for these ten months would be?
- a. Positive b. Negative
c. Zero d. A or C

MTP Apr 21

- (27) Which measure of dispersion is based on all the observations?
- a. Mean Deviation
b. Standard Deviation
c. Quartile Deviation
d. A and B but not C

MTP Apr 21

- (28) The Sum of the squares of the deviations from mean of 10 observations is 250. Mean of the data is 10. Find coefficient of variation.
- a. 10% b. 25%
c. 50% d. 0%

MTP Apr 21

- (29) The Standard Deviation of a variable x is known to be 10. The Standard deviation of $50+5x$
- a. 50 b. 100
c. 10 d. 500

ICAI SM, MTP Apr 21

- (30) The of mean and SD of a series is $a + b$, if we add 2 to each observation of the series then the sum of the mean and SD is
- a. $a+b+2$ b. $6-a+b$
c. $4+a-b$ d. $a+b+4$

MTP Nov 21

- (31) The SD is independent of change of
- a. Scale b. Origin
c. Both (a) and (b) d. None of these

MTP Nov 21

- (32) If all the observations are decreased by 4, find the relation between new SD and old SD.
- a. New SD = Old SD/2
b. New SD = Old SD - 2
c. New SD = Old SD - 4
d. Remains unchanged

MTP Nov 21

- (33) Standard deviation of first n natural number is 2. What is the value of n ?
- a. 7 b. 6
c. 5 d. 8

MTP Nov 21

- (34) Find the variance of $3x+2$ if standard deviation of x is 4
- a. 9 b. 160
c. 16 d. 144

MTP Nov 21

- (35) If the variance of $x = 148.6$ and mean of $x = 40$, then the coefficient of variation is
- a. 37.15 b. 30.48
c. 33.75 d. None of these

MTP Oct 21/ RTP Sep 24

- (36) If x and y are related by $y = 2x + 5$ and the SD and AM of x are known to be 5 and 10 respectively., then the coefficient of variation of y is
- a. 25 b. 30
c. 40 d. 20

MTP March 22

- (37) If x and y are related by $y = 2x + 5$ and the SD and AM of x are known to be 5 and 10 resp., then the coefficient of variation of y is
- a. 25 b. 30
c. 40 d. 20

MTP June 22

- (38) SD of first five consecutive natural numbers is:
- a. $\sqrt{10}$ b. $\sqrt{8}$
c. $\sqrt{3}$ d. $\sqrt{2}$

MTP June 22

- (39) If the profit of a company remains same for the last 10 months then the SD of profit of the company would be:
- a. Positive b. Negative
c. Zero d. either (a) or (c)

MTP June 22

- (40) The SD of a variable x is to be 10. SD of $50+5x$ is
- a. 50 b. 100
c. 10 d. 500

MTP June 22

- (41) If mean and coefficient of variation of the marks of n students is 20 and 80 respectively. What will be variance of them
- a. 256 b. 16
c. 25 d. None of these

MTP Dec 22 - Series I

- (42) If the standard deviation of 1, 2, 3, 4, ... 10 is σ , then the SD of 11, 12, 13, 14, ..., 20 is:
- a. 10σ b. $10+\sigma$
c. σ d. None of these

MTP Dec 22 - Series I

- (43) What is the SD of the following series :

| Meas. | 0-10 | 10-20 | 20-30 | 30-40 |
|-------|------|-------|-------|-------|
| Freq. | 1 | 3 | 4 | 2 |

- a. 81 b. 7.6
c. 9 d. 2.26

MTP Dec 22 - Series I

- (44) If all observations in a distribution are increased by 6, then the variance of the series will be ____
- a. Increased b. Decreased
c. Unchanged d. None of these

MTP Dec 22 - Series I

- (45) The arithmetic mean and coefficient of variation of data set x are respectively 10 and 30. The variance of $30-2x$ is
- a. 28 b. 32
c. 34 d. 36

MTP Dec 22 – Series I

- (46) If $2x + 3y + 4 = 0$ and $v(x) = 6$ then $v(y)$ is:
- $8/3$
 - 9
 - 9
 - 6

MTP Dec 22 Series II

- (47) SD of first five consecutive natural numbers is:
- $\sqrt{10}$
 - $\sqrt{8}$
 - $\sqrt{3}$
 - $\sqrt{2}$

MTP Dec 22 Series II

- (48) If the profit of a company remain same for the last 10 months then the SD of profit would be:
- Positive
 - Negative
 - Zero
 - Either A or C

MTP Dec 22 Series II

- (49) The sum of mean and SD of a series is $a + b$, if we add 2 to each observation of the series then the sum of mean and SD is :
- $a + b + 2$
 - $6 - a + b$
 - $4 + a - b$
 - $a + b + 4$

MTP June 2023 Series I

- (50) If the coefficient of variation and standard deviation are 60 and 12 respectively, then the arithmetic mean of the distribution is
- 40
 - 36
 - 20
 - 19

MTP June 2023 Series I

- (51) If the sum of square of the value equals to 3390, Number of observation are 30 and Standard deviation is 7, what is the mean value of the above observation?
- 14
 - 11
 - 8
 - 5

MTP June 2023 Series I

- (52) If the variance of random variable 'x' is 18, then what is variance of $y = 2x + 5$?
- 34
 - 39
 - 68
 - 72

MTP June 2023 Series I

- (53) If the variance of given data is 12, and their mean value is 40, what is coefficient of variation (CV)?
- 5.66%
 - 6.66%
 - 7.50%
 - 8.65%

MTP June 2023 Series I

- (54) In a given set if all data are of same value then variance would be:
- 0
 - 1
 - 1
 - 0.5

MTP June 2023 Series II

- (55) There are two startups in ecommerce sector struggling to acquire the market. Following data is for Mean and Standard Deviation of billing amount of bought items per month on their website.

| Startup | A | B |
|-------------------------|---------|---------|
| No. of customers/ month | 40 | 30 |
| Mean billing amount | ₹ 2,500 | ₹ 2,200 |
| SD of billing amount | ₹ 10 | ₹ 11 |

Which startup has a better consistency when it comes to sales numbers?

- Startup A
- Startup B
- Both A and B
- Need more information

MTP June 2023 Series II

- (56) Which of the following is the best measure to calculate the volatility of stock market?
- Covariance
 - Standard Deviation
 - Variance
 - All of the above

MTP Dec 2023 Series I

- (57) Origin is shifted by 5, what will happen
- SD will increase by 5
 - QD will increase by 5
 - MD will increase by 5
 - There will be no change in SD

MTP Dec 2023 Series I

- (58) If mean and coefficient of variation of the marks of 10 students is 20 and 80 respectively. What will be the variance of them?
- 256
 - 16
 - 25
 - None of these

MTP Dec 2023 Series I

- (59) If the same amount is added or subtracted from all the of an individual series then the standard deviation and variance both shall be ____
- Changed
 - Unchanged
 - Same
 - None of these

MTP Dec 2023 Series II

- (60) If the S.D. of x is 4, what is the variance of $(5 - 2x)$?
- 64
 - 36
 - 16
 - None of these

MTP Dec 2023 Series II

- (61) Mean and S.D. of a given set of observations' is
 ☆ 1,500 and 400 respectively. If there is an increment of 100 in the first year and each observation is hiked by 20% in 2nd years, then find new mean and S.D.
- | | |
|-------------|-------------|
| a. 1920,480 | b. 1920,580 |
| c. 1600,480 | d. 1600,400 |

MTP Dec 2023 Series II

- (62) If 5 is subtracted from each observation of some
 ☆ certain item then its co-efficient of variation is 10% and if 5 is added to each item then its coefficient of variation is 6%. Find original coefficient of variation.
- | | |
|-------|------------------|
| a. 8% | b. 7.5% |
| c. 4% | d. None of these |

MTP June 24 Series I

- (63) Suppose a population A has 100 observations 101,102,103,200 and another population B has 100 observations 151, 152, 153, 250. If V_A and V_B represents the variance of the two populations respectively, then V_A / V_B _____
- | | |
|--------|--------|
| a. 9/4 | b. 1 |
| c. 4/9 | d. 2/3 |

MTP June 24 Series I

- (64) If variance of x is 5, then find the variance of $(2-3x)$
- | | |
|-------|--------|
| a. 10 | b. 45 |
| c. 5 | d. -13 |

MTP June 24 Series I

- (65) The sum of the squares of deviations of a set of observations has the smallest value, when the deviations are taken from their
- | | |
|----------|------------------|
| a. A. M. | b. H. M. |
| c. G. M. | d. None of these |

MTP June 24 Series II

- (66) The sum of mean and SD of a series is $a + b$, if we add 2 to each observation of the series then the sum of mean and SD is :
- | | |
|------------|------------|
| a. $a+b+2$ | b. $6-a+b$ |
| c. $4+a-b$ | d. $a+b+4$ |

MTP June 24 Series II

- (67) If the Standard Deviation of 10 observations is 4 and if each item is divided by -2 , then Standard Deviation of new series is
- | | |
|------|------------------|
| a. 2 | b. -2 |
| c. 4 | d. None of these |

MTP June 24 Series II

- (68) For a set of 100 observations, taking assumed mean as 4, the sum of the deviations is -11 cm, and the sum of the squares of these deviations is 257 cm². The coefficient of variation is:
- | | |
|-----------|------------------|
| a. 41.13% | b. 42.13% |
| c. 40.13% | d. None of these |

MTP June 24 Series II

- (69) Mean and S.D. of x is 50 and 5 respectively, Find mean and S.D. of $\frac{x-50}{5}$
- | | |
|-----------|-----------|
| a. (1,0) | b. (0,1) |
| c. (1,-1) | d. (0,-1) |

MTP June 24 Series III

- (70) The standard deviation of 25, 32, 43, 53, 62, 59, 48, 31, 24, 33 is
- | | |
|----------|------------------|
| a. 13.23 | b. 12.33 |
| c. 11.33 | d. None of these |

MTP June 24 Series III

- (71) The SD is independent of change of
- | | |
|-----------|----------|
| a. Origin | b. Scale |
| c. Both | d. None |

MTP June 24 Series III

- (72) If the mean of frequency distribution is 100 and coefficient of variation is 45% then SD is
- | | |
|--------|---------|
| a. 45 | b. 0.45 |
| c. 4.5 | d. 450 |

MTP June 24 Series III

- (73) if the mean and SD of X are a and b respectively, then the S.D of $\frac{x-a}{b}$ is
- | | |
|----------|---------|
| a. a/b | b. -1 |
| c. 1 | d. ab |

MTP Sep 24 Series I

- (74) Origin is shifted by 5, what will happen
- | |
|----------------------------------|
| a. SD will increase by 5 |
| b. QD will increase by 5 |
| c. MD will increase by 5 |
| d. There will be no change in SD |

MTP Sep 24 Series I

- (75) If mean and coefficient of variation of the marks of 10 students is 20 and 80 respectively. What will be the variance of them?
- | | |
|--------|------------------|
| a. 256 | b. 16 |
| c. 25 | d. None of these |

(76) If the same amount is added or subtracted from all the of an individual series then the standard deviation and variance both shall be

- a. Changed
b. Unchanged
c. Same
d. None of these

MTP Sep 24 Series I

(77) If all the observations are increased by 6, then the variance of the series will be

- a. Increased
b. Decreased
c. Unchanged
d. None of these

MTP Sep 24 Series II

Answer Key

| | | |
|------|------|------|
| 1 a | 2 a | 3 a |
| 4 c | 5 a | 6 b |
| 7 c | 8 a | 9 c |
| 10 b | 11 c | 12 a |
| 13 a | 14 c | 15 a |
| 16 b | 17 c | 18 b |
| 19 a | 20 a | 21 c |
| 22 b | 23 d | 24 c |
| 25 b | 26 c | 27 d |
| 28 c | 29 a | 30 a |
| 31 b | 32 d | 33 a |
| 34 d | 35 b | 36 c |
| 37 c | 38 d | 39 c |
| 40 a | 41 a | 42 c |
| 43 c | 44 c | 45 d |
| 46 a | 47 d | 48 c |
| 49 a | 50 c | 51 c |
| 52 b | 53 d | 54 a |
| 55 a | 56 b | 57 d |
| 58 a | 59 b | 60 b |
| 61 a | 62 b | 63 b |
| 64 b | 65 a | 66 a |
| 67 a | 68 a | 69 b |
| 70 a | 71 a | 72 a |
| 73 c | 74 d | 75 a |
| 76 b | 77 c | |

Quartile Deviation

Past Exam Questions

PYQ May 18

(1) $\frac{(Q_3 - Q_1)}{(Q_3 + Q_1)}$ is known as

- a. Coefficient of Range
b. Coefficient of Q.D.
c. Coefficient of S.D.
d. Coefficient of M.D.

PYQ June 19

(2) The Q.D of 6 numbers 15, 8, 36, 40, 38, 41 is

- ★ a. 12.5
b. 25
c. 13.5
d. 37

PYQ June 19

(3) Coefficient of quartile deviation is $1/4$ then Q_3 / Q_1

- ★ a. $5/3$
b. $4/3$
c. $3/4$
d. $3/5$

PYQ Jan. 21

(4) Which of the following is a relative measure of dispersion?

- a. Range
b. Mean deviation
c. Standard deviation
d. Coefficient of quartile deviation

PYQ June 22

(5) Which is not a measure of central tendency

- a. Mean
b. Median
c. Quartile deviation
d. Mode

PYQ June 19

(6) Standard deviation is _____ times of $\sqrt{MD \times QD}$

- ★ a. $2/3$
b. $4/5$
c. $\sqrt{\frac{15}{8}}$
d. $\sqrt{\frac{8}{15}}$

PYQ Nov. 19

(7) The approximate ratio of SD, MD, QD is:

- a. 3 : 4 : 5
b. 2 : 3 : 4
c. 15 : 12 : 10
d. 5 : 6 : 7

PYQ Dec 22

(8) If the first quartile is 56.50 and the third quartile is 77.50, then the co-efficient of QD is:

- a. 638.09
b. 15.67
c. 63.80
d. 156.71

PYQ Dec 22

- (9) _____ is based on all the observations and _____ is based on the central fifty percent of the observations.
- Mean deviation, Range
 - Mean deviation, quartile deviation
 - Range, Standard deviation
 - Quartile deviation, standard deviation

PYQ Dec 22

- (10) Which one of the following is not a method of measures of dispersion?
- Standard deviation
 - Mean deviation
 - Range
 - Concurrent deviation method

PYQ June 23

- (11) For a given set of normally distributed data, the following statistical parameters are known: Mean = 6; Standard deviation = 2.6; Median = 5 and Quartile deviation = 1.5, then the coefficient of quartile deviation equals to
- 30
 - 32
 - 25
 - 39

PYQ June 23

- (12) If the first quartile is 42.75 and the third quartile is 74.25, then the coefficient of QD is:
- 29.62
 - 15.75
 - 17.57
 - 26.92

PYQ Dec 23

- (13) If the quartile deviation is 12 and the first quartile is 25, then the value of the third quartile is:
- 37
 - 49
 - 61
 - 60

PYQ Dec 23

- (14) If 'x' and 'y' are related as $3x - 4y = 20$ and the quartile deviation of 'x' is 12, then the quartile deviation of 'y' is:
- 9
 - 8
 - 7
 - 6

PYQ June 24

- (15) If in a data set, 25 percent of values are smaller than 30 and one-fourth of values are larger than 70, then the coefficient of quartile deviation is _____ %
- 40
 - 30
 - 70
 - 50

PYQ Sep 2

- (16) In which of the following there is no impact of presence of extreme observations?
- Range
 - Quartile deviation
 - Standard deviation
 - Variance

PYQ Sep 2

- (17) The Quartile Deviation of the distribution of the following data is:

| x | f(x) |
|---|------|
| 2 | 2 |
| 3 | 4 |
| 4 | 8 |
| 5 | 4 |
| 6 | 1 |

- 1
- 0
- 1/4
- 1/2

Answer Key

- | | | |
|------|------|------|
| 1 b | 2 c | 3 a |
| 4 d | 5 c | 6 c |
| 7 c | 8 b | 9 b |
| 10 d | 11 a | 12 d |
| 13 b | 14 a | 15 a |
| 16 b | 17 a | |

Quartile Deviation

Mock Test Paper Questions

MTP May 19/ RTP Sep 24

- (1) The quartiles of a variable are 45, 52 and 65 respectively. Its quartile deviation is
- 10
 - 20
 - 25
 - 8.30

MTP May 19 Series I

- (2) Quartiles can be determined graphically using
- Histogram
 - Frequency Polygon
 - Ogive
 - Pie chart

MTP May 19 Series II

- (3) Which measures of dispersions is not affected by the presence of extreme observations?
- Range
 - Mean deviation
 - Standard deviation
 - Quartile deviation

MTP May 19 Series II

- (4) Which measure is based on only the central fifty percent of the observations?
- Standard deviation
 - Quartile deviation
 - Mean deviation
 - All these measures

MTP May 20

- (5) The appropriate measure of dispersion for open-end classification is
- Standard deviation
 - Mean deviation
 - Quartile deviation
 - All these measures

MTP May 20

- (6) The quartiles of a variable are 45, 52 and 75 respectively. Its quartile deviation is
- 15
 - 20
 - 25
 - 8.30

MTP May 20

- (7) If x and y are related as $3x+4y = 20$ and the quartile deviation of x is 16, then the QD of y is
- 16
 - 14
 - 10
 - 12

MTP Nov 20

- (8) The quartiles of the variables are 45, 52, and 65 respectively, its Quartile Deviation is
- 5
 - 10
 - 25
 - 8.30

MTP Apr 21

- (9) Interval Quartile Range is _____ of QD
- Half
 - Double
 - Triple
 - Equal

MTP Nov 21

- (10) In the equation $4x+2y = 3$, quartile deviation for y is 3. Find the quartile deviation for x
- 4.5
 - 6
 - 1.5
 - None of these

MTP Oct 21

- (11) If the quartile deviation of x is 6 and $3x + 6y = 20$, what is the quartile deviation of y ?
- 3
 - 4
 - 5
 - 6

MTP March 22

- (12) The quartiles of a variable are 45, 52 and 65 respectively. Its quartile deviation is
- 10
 - 20
 - 25
 - 8.30

MTP March 22

- (13) If x and y are related as $3x-4y = 20$ then the Quartile Deviation of x is 12, then the Quartile deviation of y is :
- 14
 - 15
 - 16
 - 9

MTP June 22

- (14) The QD from the following observations is
★ 10, 18, 20, 28, 15, 17, 22, 25, 29, 32, 34 is equal to:
- 8
 - 6
 - 10
 - 5

MTP Dec 22 Series II

- (15) The QD of six numbers 15, 8, 36, 40, 38, 41 is equal to:
- 12.5
 - 25
 - 13.5
 - 37

MTP Dec 22 Series II

- (16) Coefficient of Quartile Deviation is $1/4$ then $Q_3 / Q_1 = ?$
- $5/3$
 - $4/3$
 - $3/4$
 - $3/5$

MTP Nov 18

- (17) If the SD of a variable X is σ then Quartile Deviation (QD) is
- $4/5 \sigma$
 - $3/2 \sigma$
 - $2/3 \sigma$
 - $5/4 \sigma$

MTP May 19

- (18) Which one is an absolute measure of dispersion?
- Range
 - Mean Deviation
 - Standard Deviation
 - All these measures

MTP Nov 20

- (19) A shift of origin has no impact on
- Mean deviation
 - Standard deviation
 - Quartile deviation
 - All of these

MTP Nov 20

- (20) Which measure is based on all the observations
- Standard deviation
 - Mean deviation
 - Quartile deviation
 - Both (a) and (b)

MTP Apr 21

- (21) Which of the below is affected by shifting of scale
- SD
 - MD

(4) Which measure is based on only the central fifty percent of the observations?

- a. Standard deviation
b. Quartile deviation
c. Mean deviation
d. All these measures

MTP May 19 Series II

(5) The appropriate measure of dispersion for open-end classification is

- a. Standard deviation
b. Mean deviation
c. Quartile deviation
d. All these measures

MTP May 20

(6) The quartiles of a variable are 45, 52 and 75 respectively. Its quartile deviation is

- a. 15
b. 20
c. 25
d. 8.30

MTP May 20

(7) If x and y are related as $3x+4y = 20$ and the quartile deviation of x is 16, then the QD of y is

- a. 16
b. 14
c. 10
d. 12

MTP May 20

(8) The quartiles of the variables are 45, 52, and 65 respectively, its Quartile Deviation is

- a. 5
b. 10
c. 25
d. 8.30

MTP Nov 20

(9) Interval Quartile Range is ___ of QD

- ★ a. Half
b. Double
c. Triple
d. Equal

MTP Apr 21

(10) In the equation $4x+2y = 3$, quartile deviation for y is 3. Find the quartile deviation for x

- ★ a. 4.5
b. 6
c. 1.5
d. None of these

MTP Nov 21

(11) If the quartile deviation of x is 6 and $3x + 6y = 20$, what is the quartile deviation of y ?

- a. 3
b. 4
c. 5
d. 6

MTP Oct 21

(12) The quartiles of a variable are 45, 52 and 65 respectively. Its quartile deviation is

- a. 10
b. 20
c. 25
d. 8.30

MTP March 22

(13) If x and y are related as $3x-4y = 20$ then the Quartile Deviation of x is 12, then the Quartile deviation of y is :

- a. 14
b. 15
c. 16
d. 9

MTP March 22

(14) The QD from the following observations is
★ 10, 18, 20, 28, 15, 17, 22, 25, 29, 32, 34 is equal to:

- a. 8
b. 6
c. 10
d. 5

MTP June 22

(15) The QD of six numbers 15, 8, 36, 40, 38, 41 is equal to:

- a. 12.5
b. 25
c. 13.5
d. 37

MTP Dec 22 Series II

(16) Coefficient of Quartile Deviation is $1/4$ then $Q_3 / Q_1 = ?$

- a. $5/3$
b. $4/3$
c. $3/4$
d. $3/5$

MTP Dec 22 Series II

(17) If the SD of a variable X is σ then Quartile Deviation (QD) is

- a. $4/5 \sigma$
b. $3/2 \sigma$
c. $2/3 \sigma$
d. $5/4 \sigma$

MTP Nov 18

(18) Which one is an absolute measure of dispersion?

- a. Range
b. Mean Deviation
c. Standard Deviation
d. All these measures

MTP May 19

(19) A shift of origin has no impact on

- a. Mean deviation
b. Standard deviation
c. Quartile deviation
d. All of these

MTP Nov 20

(20) Which measure is based on all the observations

- a. Standard deviation
b. Mean deviation
c. Quartile deviation
d. Both (a) and (b)

MTP Nov 20

(21) Which of the below is affected by shifting of scale

- a. SD
b. MD

MTP Apr 21

(22) Which one is an absolute measure of dispersion?
 a. Range
 b. Mean Deviation
 c. Standard Deviation
 d. All these measures

MTP Oct 21

(23) The Quartile deviation is
 a. $\frac{2}{3}$ of SD
 b. $\frac{4}{5}$ of SD
 c. $\frac{5}{6}$ of SD
 d. None of these

MTP June 22

(24) The approximate ratio of SD, MD, QD is
 a. 2:3:4
 b. 3:4:5
 c. 15:12:10
 d. 5:6:7

MTP Dec 22 – Series I

(25) _____ is based on all the observations and _____ is based on the central fifty percent of the observations.
 a. Mean deviation, Range
 b. Mean deviation, quartile deviation
 c. Range, standard deviation
 d. Quartile deviation, standard deviation

MTP June 2023 Series I

(26) Which one of the following is not a method of measures of dispersion?
 a. Standard deviation
 b. Mean deviation
 c. Range
 d. Concurrent deviation method

MTP June 2023 Series I

(27) If the first quartile is 56. and the third quartile is 77. then the co-efficient of quartile deviation is
 a. 18.09
 b. 15.79
 c. 63.8
 d. 56.71

MTP June 2023 Series II

(28) In case of extreme sampling fluctuations, which is the best measure of dispersion?
 a. Quartile Deviation
 b. Standard Deviation
 c. Mean Deviation
 d. Range

MTP Dec 23 – Series I

(29) If Quartile deviation is 7. Find the value of x from the arranged series: 2, x, 6, 7, 9, 16, 18.
 a. 5
 b. 2
 c. 8
 d. 6

(30) If the first Quartile is 142 and semi-inter quartile range is 18, then the value of median is:
 a. 151
 b. 160
 c. 178
 d. None of these

MTP June 24 Series I

(31) If X and Y are related as $3X - 4Y = 20$ and the quartile deviation of X is 12, then the quartile deviation of Y is:
 a. 14
 b. 15
 c. 16
 d. 9

MTP Sep 24 Series I

(32) For a moderately skewed distribution, quartile deviation and the standard deviation are related by:
 a. $S.D. = \frac{2}{3} Q.D$
 b. $S.D. = \frac{3}{4} Q.D$
 c. $S.D. = \frac{4}{3} Q.D$
 d. $S.D. = \frac{3}{2} Q.D$

MTP Sep 24 Series II

(33) If the first Quartile is 142 and semi-Inter quartile range is 18, then the value of median is
 a. 18
 b. 24
 c. 22
 d. 21

MTP Sep 24 Series II

(34) Which measures of dispersions is not affected by the presence of extreme observations?
 a. Range
 b. Mean deviation
 c. Standard deviation
 d. Quartile deviation

Answer Key

| | | |
|------|------|------|
| 1 a | 2 c | 3 d |
| 4 b | 5 c | 6 a |
| 7 d | 8 b | 9 b |
| 10 c | 11 a | 12 a |
| 13 d | 14 b | 15 c |
| 16 a | 17 c | 18 d |
| 19 d | 20 d | 21 d |
| 22 d | 23 a | 24 c |
| 25 b | 26 d | 27 b |
| 28 a | 29 b | 30 b |
| 31 d | 32 d | 33 b |
| 34 d | | |