PROBABILITY

1. **The Marks obtained by 10 students in an examination were as follows: 70, 65, 68, 70, 75, 73, 80, 70, 83, 86. Then the mean deviation about mode is**

   (A) 7.71

   (B) 5.4

   (C) 54

   (D) 5.6

   Answer: (B) 5.4

2. **For a Distribution mean = 65, median = 70 and coefficient of skewness = -0.6. Then mode and coefficient of variation are respectively**

   (A) 38.5 and 80

   (B) 55 and 25.64

   (C) 80 and 38.5

   (D) 25.64 and 55

   Answer: (C) 80 and 38.5

3. **The Marks Obtained by 10 Students in a test are:**

   Marks scored: 1 2 3 4 5

   No of students: 0 2 1 3 4

   The median score is

   (A) 4

   (B) 2

   (C) 3

   (D) 1

   Answer: (A) 4

4. **The Mode of 6, 4, 5, 6, 3, 2, 2, 5, 4, 3, 6, 5, 4, 7, 4, 9, 9 is**

   (A) 6

   (B) 4

   (C) 5

   (D) 9

   Answer: (B) 4

5. **The Arithmetic mean of all the factors of 21 is**

   (A) 11/3

   (B) 31/3

   (C) 5

   (D) 8

   Answer: (D) 8

6. **The Total Number of all possible squares in a chess board is**

   (A) 8

   (B) 64

   (C) 512

   (D) 204

   Answer: (D) 204.

7. **The average of first nine prime number is**

   (A) 1119

   (B) 22

   (C) 25

   (D) 1224

   Answer: (A) 1119.

8. **Mean of 25 observations was found to be 78.4. But later it was found that 96 was mis-read as 69. Then the corrected mean is**

   (A) 79.48

   (B) 76.54

   (C) 81.32

   (D) 78.4

   Answer: (A) 79.48.

9. **If $\frac{1}{8}$ of a pencil is black, $\frac{1}{2}$ of the remaining is white and the remaining $3\frac{1}{2}$ cm is blue, find the length of the pencil.**

   (A) 6 cm

   (B) 8 cm

   (C) 10 cm

   (D) 12 cm

Answer: (B) 8 cm.

10. **If the mean of four observations is 20 and when a constant C is added to each observation, the mean becomes 22. Find the value of C.**

    (A) 2

    (B) -2

    (C) 6

    (D) 4

    Answer: (A) 2.

11. **If each entry in a data is divided by 10 find the change in their arithmetic mean**

    (A) Multiplied by 10

    (B) Does not Change

    (C) is Divided by 10.

    (D) is Decreased by 10.

    Answer: (C) is Divided by 10.

12. **Time taken by 5 members winner team of a 5×1000 meters relay race are 2.25, 2.15, 2.30, 2.60 and 2.40 minutes respectively. Find the team's average speed in km/hour.**

    (A) 24

    (B) 20

    (C) 15

    (D) 25

    Answer: (D) 25.

13. **Find the coefficient of variation if n=10, $\bar{x} = 12$ and $\sum x^2 = 1530$.**

    (A) 153

    (B) 144

    (C) 9

    (D) 25

    Answer: (D) 25

14. **Obtain the mean of the following data**

    X : 5 10 15 20 25

    F : 3 10 25 7   5

    (A) 15.0

(B) 15.2

(C) 15.1

(D) 15.5

Answer: (C) 15.1

15. The average mark of 10 children is 80 then their total mark is

(A) 200

(B) 300

(C) 800

(D) 400

Answer: (C) 800

Set 2

1. The number of values less than the median of 97 values is

(A) 48

(B) 0.50

(C) 48.5

(D) 47

Answer: (A) 48.

2. **A set of values in ascending order are 20, 22, x, 28, 30, 32. If median of these values is 26 then the value of x is**

(A) 24

(B) 28

(C) 23

(D) 26

Answer: (A) 24.

3. Thirteen eggs collected in a farm have the following weights in grams: 32, 40, 28, 33, 39, 46, 41, 33, 40, 41, 31, 32, 33. The mode of the above data is

(A) 32

(B) 46

(C) 40

(D) 33

Answer: (D) 33.

4. **If the mean of x, x+2, x+4, x+6, x+8 is 20 then x is**

   (A) 18

   (B) 76

   (C) 24

   (D) 16

   Answer: (D) 16.

5. **The Mean of 15numbers is 213. If each number is divided by 3, the new mean will be**

   (A) 71

   (B) 639

   (C) 210

   (D) 42.6

   Answer: (A) 71

6. **The Arithmetic mean of 10 numbers is -7. If 5 is added to every number then the new arithmetic mean is**

   (A) -2

   (B) 12

   (C) -7

   (D) 17

   Answer: (A) -2.

7. **The Product of mean and mode for the data 1, 2, 2, 3, 3, 3, 4, 4, 4, 4 equals**

   (A) 12

   (B) 4

   (C) 3

   (D) 7

   Answer: (A) 12

8. **The mean mark of 100 students was found to be 60. Later on, it was found that a score of 91 was misread as 41. Then the correct mean corresponding to the correct score is**

   (A) 60

   (B) 60.5

   (C) 59.5

(D) 58.5

Answer: (B) 60.5

9. **The mean of 5 observations is 25, if one of the observation is excluded the mean becomes 20. The excluded number is**

(A) 45

(B) 40

(C) 20

(D) 10

Answer: (A) 45

10. **The Mean of the first n natural numbers**

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

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

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

(D) n^2

Answer: (C) $\frac{(n+1)}{2}$

11. **If the arithmetic Mean of 7, 5, 13, x and a be 10, then the value of x is**

(A) 10

(B) 16

(C) 12

(D) 15

Answer: (B) 16

12. **The mean of first five prime numbers is**

(A) 5.0

(B) 4.5

(C) 5.6

(D) 6.5

Answer: (C) 5.6

13. **The Mean weight of 40 students using the data given below is**

Weights (in Kgs): 48 50 53 54

No of students : 5 20 10   5

(A) 51

(B) 50

(C) 51.5

(D) 52

Answer: (A) 51

14. **The arithmetic mean of a group of 100 observations was calculated as 63. It was later found that one observation was wrongly taken as 75 instead of 65. The correct mean is**

(A) 63.1

(B) 63

(C) 62.9

(D) 73

Answer: (C) 62.9

15. **Mean of 100 items and their standard deviation is 20. Then the sum of squares of all the items is**

(A) 46000

(B) 400000

(C) 362000

(D) 8000

Answer: (B) 400000

16. **The Mean of 5 numbers is 25. If one number is excluded and the mean is still 25, the excluded number is**

(A) 25

(B) 0

(C) 20

(D) 30

Answer: (A) 25

17. **The ages of children in a scout cam are 14, 14, 15, 16, 14, 16, 15, 16, 14, 14 years. The relationship between mean, median and mode is**

(A) Mean = Median = Mode

(B) Mean < Median < Mode

(C) Mean > Median > Mode

(D) Median < Mode < Mean

Answer: (C) Mean > Median > Mode

18. **What is the standard deviation of the first n natural numbers?**

    (A) $\sqrt{\frac{n^2-1}{12}}$ (B) $\sqrt{\frac{n^2+1}{12}}$ (C) $\sqrt{\frac{n(n+1)}{12}}$ (D) $\sqrt{\frac{n(n+1)(2n+1)}{12}}$

    Answer: (A) $\sqrt{\frac{n^2-1}{12}}$

19. **The standard deviation of 50, 47, 53, 48, 51, 52, 49 is**

    (A) 4

    (B) 2

    (C) 14/3

    (D) $\sqrt{\frac{14}{3}}$

    Answer: 14/3

20. **If l is the standard deviation of the elements α, β, ϒ. Then the standard deviation of the elements α+3, β+3, ϒ+3 is**

    (A) $l + 3$

    (B) $l - 3$

    (C) l

    (D) $3\,l$

    Answer: (C) l

21. **Find the range of the following data: 25, 67, 78, 43, 21, 17, 49, 54, 76, 92, 20, 45, 86, 37, 35.**

    (A) 78

    (B) 75

    (C) 92

    (D) 86

    Answer: (B) 75

22. **The heights (in meters) of 10 trees in a grove are 15, 2, 8, 11, 3, 9, 9, 6, 10, 6, 12. The range for this data is**

    (A) 10

    (B) 15

(C) 6

(D) 13

Answer: (D) 13

23. **The range of the first 30 Natural numbers is**

    (A) 28

    (B) 29

    (C) 30

    (D) 31

    Answer: (B) 29

24. **Find the range of first 10 prime numbers**

    (A) 28

    (B) 26

    (C) 29

    (D) 27

    Answer: (D) 27

25. **Probability of sure and impossible events**

    (A) $(\frac{1}{2}, \frac{1}{2})$

    (B) (0,1)

    (C) (1,0)

    (D) (1,1)

    Answer: (C) (1,0)

26. **For a set of n values, $\sum x - \bar{x}$ is equal to**

    (A) $n\bar{x}$

    (B) $(n-2)\bar{x}$

    (C) $(n-1)\bar{x}$

    (D) 0

    Answer: $(n-1)\bar{x}$

27. **For any n observations of data, what is the value of $(\sum x) - n\bar{x}$?**

    (A) $n(\sum x)$

    (B) $(n-2)\bar{x}$

    (C) $(n-1)\bar{x}$

    (D) 0

Answer: (D) 0

28. **Find the average of first ten positive multiples of three?**

    (A) 17.5

    (B) 17

    (C) 16.5

    (D) 16

    Answer: (C) 16.5

29. **The average marks of 6 boys in a group is 47. The marks of 5 of them are 52, 47, 52, 44 and 41. The marks of the sixth boy is**

    (A) 41

    (B) 44

    (C) 47

    (D) 46

    Answer: (D) 46

30. **The average of 4 values is 20 and when a quantity is added to each value the average is 22. Find the quantity.**

    (A) 1

    (B) 2

    (C) 3

    (D) 4

    Answer: (B) 2

31. **Average of a and b is 45 and the average of b and c is 35 then a – c =?**

    (A) 20

    (B) 30

    (C) 25

    (D) 15

    Answer: (A) 20

32. **Temperatures are recorded every 1 hour for eleven hours from 6.00 am onwards in a town. The averages of the first six readings is 30 degree Celsius, the last six readings is 20 degree Celsius and the overall average is 26 degree Celsius. The 6th reading is**

(A) 25 degree

(B) 15 degree

(C) 14 degree

(D) 26 degree

Answer: (C) 14 degree.

33. **There are 3 persons namely, A B and C in family. The average age of A and B is 20, the average age of B and C is 19, and the average age of C and A is 21. The ages of A, B and C are**

(A) 22, 18, 20

(B) 24, 20, 16

(C) 18, 20, 24

(D) 16, 20, 24

Answer: (A) 22, 18, 20

34. **The average of 11 numbers is 10.8. If the average of the first six numbers is 10.4 and that of the last six numbers is 11.5, then the middle (6th) number is**

(A) 10.3

(B) 12.6

(C) 13.5

(D) 15.5

Answer: (B) 12.6

35. **The average salary of all workers in the factory Rs. 60. The average salary of 12 officers is Rs. 400. The average salary of rest is Rs. 56. Find the total no of workers in the factory.**

(A) 1116

(B) 1032

(C) 1212

(D) 1132

Answer: (B) 1032.

36. **The average weight of 10 persons is increased by 1.5 Kg when one of them with weight 50 Kg is replaced by a new man. The weight of the new man (in Kgs) is**

(A) 60

(B) 50

(C) 55

(D) 65

Answer: (D) 65.

37. **The average age of 50 students I 10th Std class is 15 years. 10 more students are admitted afresh in the class and the average age is increased by 0.5 years. The average age of the newly joined students is**

(A) 15

(B) 16

(C) 17

(D) 18

Answer: (D) 18.

38. **The Average height of 25boys of a class of 40 is 150cm. If the average height of the remaining boys is 154cm, then the average height of the whole class is**

(A) 152

(B) 151.5

(C) 154

(D) 150

Answer:

39. **The average of five numbers is 20. If we eliminate one number from it, the average will be reduced by 5. What is the number eliminated?**

(A) 5

(B) 40

(C) 20

(D) 15

Answer: (B) 40

40. **The coefficient of skewness based on quartiles is 5 / 9. If the difference of the quartiles is 72 and median is 30, then the value of the upper quartile is**

(A) 90

(B) 86

(C) 14

(D) 46.8

Answer: (B) 86.

41. **A card is drawn from a pack of 52 cards at random. The probability of getting neither a king nor a queen is**

(A) 2/13

(B) 11/13

(C) 4/13

(D) 8/13

Answer: (B) 11/13.

42. **Two dice are thrown simultaneously. The probability of getting a doublet is**

(A) 1/36

(B) 1/3

(C) 1/6

(D) 2/3

Answer: (C) 1/6.

43. **From the following table on distribution of weekly wages of 800 workers of a factory. Compute the numbers who earn more than Rs. 4000**

Wages in hundreds of Rupees	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55
No. of Workers	50	70	160	180	150	120	70

(A) 340

(B) 0

(C) 150

(D) 270

Answer: 340

44. The frequency distribution of sales of shoes of a particular brand on a certain day is

Size of Shoe	4	5	6	7	8	9	10
No. of Pairs Sold	2	5	3	23	39	27	1

Then the modal size of shoes sold is

(A) 10

(B) 8

(C) 1

(D) 39

Answer: (B) 8

45. The percentage of bulbs having lifetime of at least 500 hours but less than 1000 hours from the frequency table is

Life Time (in Hours)	300 to 399	400 to 499	500 to 599	600 to 699	700 to 799	800 to 899	900 to 999	1000 to 1099	1100 to 1199
No. of Bulbs	14	46	58	76	68	62	48	22	6

(A) 88

(B) 312

(C) 78

(D) 22

Answer: (C) 78.

46. The following table gives the lifetime of 500 CFL lamps. A bulb is selected at random. The probability that the life time of the selected bulb is atmost 11 months is given by

Life Time (Months)	9	10	11	12	13	14	More than	Total

							14	
No. of Lamps	14	46	58	76	68	62	48	22

(A) 82 / 500

(B) 179 / 500

(C) 97 / 500

(D) 268 / 500

Answer: (B) 179 / 500

47. **From the following table, find the number of students who have scored marks between 20 and 50.**

Marks	No. of Students
10 – 19	**10**
20 – 30	**7**
31 – 40	**13**
41 – 50	**18**
51 – 60	**12**
61 - 100	**24**

(A) 20

(B) 31

(C) 30

(D) 38

Answer: (D) 38

48. **X is equal to**

2	4	6	8	7
3	15	35	63	X

(A) 51

(B) 48

(C) 59

(D) 58

Answer: (B) 48.