DPP
DAILY PRACTICE PROBLEMS

Class : XIth   **Subject : MATHS**
Date :   **DPP No. : 5**

Topic :- STATISTICS

1. The following information relates to a sample of size $60: \sum x_i^2 = 18000, \sum x_i = 960$. The variance is
    a) 6.63 b) 16 c) 22 d) 44

2. If in a moderately skewed distribution the values of mode and mean are 6λ and 9λ respectively, then the value of the median is
    a) 8λ b) 7λ c) 6λ d) 5λ

3. If the average of the numbers 148, 146, 144, 142, ... in AP, be 125, then the total numbers in the series will be
    a) 18 b) 24 c) 30 d) 48

4. The two regression lines are $2x - 7y + 6 = 0$ and $7x - 2y + 1 = 0$. The correlation coefficient between x and y is
    a) $-\frac{2}{3}$ b) $\frac{2}{7}$ c) $\frac{4}{9}$ d) None of these

5. An ogive is used to determine
    a) Mean   b) Median   c) Mode   d) HM

6. The mean of 30 given numbers, when it is given that the mean of 10 of them is 12 and the mean of the remaining 20 is 9, is equal to
    a) 11 b) 10 c) 9 d) 5

7. If the median of $33, 28, 20, 25, 34, x$ is 29, then the maximum possible value of x is
    a) 30 b) 31 c) 29 d) 32

8. Let $x_1, x_2, x_3, ..., x_n$ be n observations and $\overline{X}$ be their arithmetic mean. The formula for the standard deviation is given by
    a) $\sum_{i=1}^{n} (x_i - \overline{X})^2$ b) $\frac{1}{n}\sum_{i=1}^{n} (x_i - \overline{X})^2$ c) $\sqrt{\frac{1}{n}\sum_{i=1}^{n} (x_i - \overline{X})^2}$ d) $\sqrt{\frac{1}{n}\sum_{i=1}^{n} x_i^2 + \overline{X}^2}$

9. If in a frequency distribution, the mean and median are 21 and 22 respectively, then its mode is approximately
    a) 24.0 b) 25.5 c) 20.5 d) 22.0

10. The arithmetic mean of a set of observations is $\overline{X}$. If each observation is divided by α and then is increased by 10, then the mean of the new series is
    a) $\frac{\overline{X}}{\alpha}$ b) $\frac{\overline{X} + 10}{\alpha}$ c) $\frac{\overline{X} + 10\alpha}{\alpha}$ d) $\alpha\overline{X} + 10$

11. The mean age of a combined group of men and women is 25 yrs. If the mean age of the group of men is 26 and that of the group of women is 21, then the percentage of men and women in the group is
    a) $60, 40$ b) $80, 20$ c) $20, 80$ d) $40, 60$

12. If the standard deviation of $x_1, x_2, \ldots x_n$ is 3.5, then the standard deviation of $-2x_1 -3, \, -2x_2 -3, \ldots, -2x_n -3$ is

    a) -7 b) -4 c) 7   d) 1.75

13. If $\sum_{i=1}^{18} (x_i - 8) = 9$ and $\sum_{i=1}^{18} (x_i - 8)^2 = 45$, then the standard derivation of $x_1, x_2, \ldots, x_{18}$ is

    a) $\frac{4}{9}$ b) $\frac{9}{4}$ c) $\frac{3}{2}$ d) None of these

14. The marks of some students were listed out of 75. The SD of marks was found to be 9. Subsequently the marks were raised to a maximum of 100 and variance of new marks was calculated. The new variance is

    a) 81   b) 122   c) 144   d) None of these

15. If a variable X takes values $0, 1, 2, \ldots, n$ with frequencies proportional to the binomial coefficients $^nC_0, {}^nC_1, {}^nC_2, \ldots, {}^nC_n$, then the Var (X) is

    a) $\frac{n^2 - 1}{12}$ b) $\frac{n}{2}$ c) $\frac{n}{4}$ d) None of these

16. If the standard deviation of the observation $-5, -4, -3 -2, -1, 0, 1, 2, 3, 4, 5$ is $\sqrt{10}$. The standard deviation of observations 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 will be

    a) $\sqrt{10} + 20$ b) $\sqrt{10} + 10$ c) $\sqrt{10}$ d)

17.   The, coefficient of SD and coefficient of variance from the given data is

Class interval	0-10	10-20	20-30	30-40	40-50
Frequency	2	10	8	4	6

    a) 50, 48.1   b) 51.9, 48.1

    c) 0.481, 48.1   d) 0.481, 51.8

18. The mean of the distribution, in which the values of X are $1, 2, \ldots, n$, the frequency of each being unity is:

    a) $\frac{n(n + 1)}{2}$ b) $\frac{n}{2}$ c) $\frac{n + 1}{2}$ d) None of these

19. The mean deviation from the median is

    a) Equal to that measured from another value

    b) Maximum if all observations are positive

    c) Greater than that measured from any other value

    d) Less than that measured from any other value

20. If r is Karl Pearson's coefficient of correlation between two sets of variates, then

    a) $r < 1$ b) $r > 1$ c) $r < -1$ d) $|r| \leq 1$