DPP
DAILY PRACTICE PROBLEMS

Class : XIth **Subject : MATHS**
Date : **DPP No. : 4**

Topic :- STATISTICS

1. The median of a set of 9 distinct observations is 20.5. if each of the largest 4 observations of the set is increased by 2, then the median of the new set
   a) Is increased by 2 b) Is decreased by 2
   c) Is two times the original median d) Remains the same as that of the original set
2. Mean and standard deviation from the following observations of marks of 5 students of a tutorial group (marks out of 25)8, 12, 13, 15, 22 are respectively
   a) 14, 4.604 b) 15, 4.604 c) 14, 5.604 d) None of these
3. The mean age of a combined group of men and women is 25 yr. If the mean age of the group of men is 26 yr and that of the group of women is 21 yr, then the percentage of men and women in the group are respectively
   a) 60, 40 b) 80, 20 c) 20, 80 d) 40, 60
4. If G is the GM of the product of r sets of observations with geometric means G_1,G_2,...,G_r respectively, then G is equal to
   a) $\log G_1 + \log G_2 + \ldots + \log G_r$ b) $G_1 \cdot G_2 \cdot \ldots \cdot G_r$ c) $\log G_1 \cdot \log G_2 \ldots \log G_r$ d) None of these
5. The frequency distribution of marks obtained by 28 students in a test carrying 40 marks is given below:

$Marks$:	0-10	10-20	20-30	30-40
$Number\ of\ students$:	6	x	y	6

If the mean of the above data is 20, then the difference between x and y is
   a) 3 b) 2 c) 1 d) 0
6. Coefficient of deviation is calculated by the formula
   a) $\frac{\overline{X}}{\sigma} \times 100$ b) $\frac{\overline{X}}{\sigma}$ c) $\frac{\sigma}{\overline{X}} \times 100$ d) $\frac{\sigma}{\overline{X}}$
7. The standard deviation of the data 6, 5, 9, 13, 12, 8, 10 is
   a) $\sqrt{\frac{52}{7}}$ b) $\frac{52}{7}$ c) $\sqrt{6}$ d) 6
8. In a moderately skewed distribution the values of mean and median are 5 and 6 respectively. The value of mode in such a situation is approximately equal to
   a) 8 b) 11 c) 16 d) None of these
9. If $\overline{X}_1$ and $\overline{X}_2$ are the means of two distributions, such that $\overline{X}_1 < \overline{X}_2$ and $\overline{X}$ is the mean of the combined distribution, then
   a) $\overline{X} < \overline{X}_1$ b) $\overline{X} > \overline{X}_2$ c) $\overline{X} = \frac{\overline{X}_1 + \overline{X}_2}{2}$ d) $\overline{X}_1 < \overline{X} < \overline{X}_2$

10. The sum of deviations of n observations about 25 is 25 and sum of deviations of the same n observations about 35 is -25. The mean of observations is

a) 25 b) 30 c) 35 d) 40

11. If two lines of regression are $3\bar{x} - 2\bar{y} + 1 = 0$ and $2\bar{x} - \bar{y} - 2 = 0$, then $(\bar{x}, \bar{y})$is

a) (8,5) b) (5,8) c) (5,5) d) (8,8)

12. Consider the following statements

(1) Mode can be computed from histogram

(2) Median is not independent of change of scale

(3) Variance is independent of change of origin and scale

Which of these is/are correct?

a) Only (1) b) Only (2)

c) Only (1) and (2) d) Only (1), (2) and (3)

13. Let G_1,G_2 be the .....geometric means of two ..... series x_1,x_2, ...x_n;y_1, y_2, ..., y_n. If G is the geometic mean of $\frac{x_i}{y_i}$, $i = 1, 2, ...,n$. Then G is equal to

a) $G_1 - G_2$ b) $\frac{\log G_1}{\log G_2}$ c) $\frac{G_1}{G_2}$ d) $\log\left(\frac{G_1}{G_2}\right)$

14. The mean deviation of the data 3,10,10,4,7,10,5 from the mean is

a) 2 b) 2.57 c) 3 d) 3.75

15. Sum of absolute deviations about median is

a) Least b) Greatest c) Zero d) None of these

16. Mean deviation for n observations x_1,x_2,...,x_n from their mean $\bar{X}$ is given by

a) $\sum_{i=1}^{n}(x_i - \bar{X})$ b) $\frac{1}{n}\sum_{i=1}^{n}|x_i - \bar{X}|$ c) $\sum_{i=1}^{n}(x_i - \bar{X})^2$ d) $\frac{1}{2}\sum_{i=1}^{n}(x_i - \bar{X})^2$

17. For the given data, the calculation corresponding to all values of variates (x,y) is following $\sum(x - \bar{x})^2 = 36, \sum(y - \bar{y})^2 = 25, \sum(x - \bar{x})(y - \bar{y}) = 20$. The Karl Pearson's correlation coefficient is

a) 0.2 b) 0.5 c) 0.66 d) 0.33

18. The correlation coefficient between x and y from the following data $\sum x = 40$, $\sum y = 50, \sum xy = 220, \sum x^2 = 200, \sum y^2 = 262, n = 10$ is

a) 0.89 b) 0.76 c) 0.91 d) 0.98

19. If the two lines of regression are $x + 4y = 3$ and $3x + y = 15$, then value of x for $y = 3$ is

a) 4 b) -9 c) -4 d) None of these

20. The mean of discrete observations y_1,y_2,...,y_n is given by

a) $\frac{\sum_{i=1}^{n} y_i f_i}{\sum_{i=1}^{n} f_i}$ b) $\frac{\sum_{i=1}^{n} y_i f_i}{n}$ c) $\frac{\sum_{i=1}^{n} y_i}{n}$ d) $\frac{\sum_{i=1}^{n} y_i}{\sum_{i=1}^{n} i}$