DPP
DAILY PRACTICE PROBLEMS

Class : XIth **Subject : MATHS**
Date : **DPP No. : 10**

Topic :- STATISTICS

1. A group of 10 items has arithmetic mean 6. If the arithmetic mean of 4 of these items is 7.5, then the mean of the remaining items is
   a) 6.5 b) 5.5 c) 4.5 d) 5.0
2. If the coefficient of variation is 45% and the mean is 12 then its standard derivation is
   a) 5.2 b) 5.3 c) 5.4 d) None of these
3. Consider any set of 201 observations $x_1, x_2, \ldots x_{200}, x_{201}$. It is given that $x_1 < x_2 < \ldots < x_{200} < x_{201}$. Then, the mean deviation of this set of observations about a point k is minimum when k equals
   a) $(x_1 + x_2 + \ldots + x_{200} + x_{201})/201$ b) x_1 c) x_{101} d) x_{201}
4. Consider the following statements :
1. The values of median and mode can be determined graphically
2. Mean, Median and Mode have the same unit
3. Range is the best measure of dispersion.
Which of these is/are correct?
   a) (1) alone b) (2) alone c) Both (2) and (3) d) None of these
5. Variance is independent of change of
   a) Origin only b) Scale only c) Origin and scale both d) None of these
6. The algebraic sum of the deviation of 20 observations measured from 30 is 2. Then, mean of observations is
   a) 28.5 b) 30.1 c) 30.5 d) 29.6
7. The average marks of boys in a class is 52 and that of girls is 42. The average marks of boys and girls combined is 50. The percentage of boys in the class is
   a) 40% b) 20% c) 80% d) 60%
8. If the mean of five observations x, $x + 2$, $x + 4$, $x + 6$ and $x + 8$ is 11, then the mean of last three observations is
   a) 13 b) 15 c) 17 d) None of these
9. In a series of $2n$ observations, half of them equal a and remaining half equal $-a$. If the standard deviation of the observations is 2, then $|a|$ equals
   a) $\frac{1}{n}$ b) $\sqrt{2}$ c) 2 d) $\frac{\sqrt{2}}{n}$
10. The weighted means of first n natural numbers whose weights are equal to the squares of corresponding numbers is
    a) $\frac{n+1}{2}$ b) $\frac{3n(n+1)}{2(2n+1)}$ c) $\frac{(n+1)(2n+1)}{6}$ d) $\frac{n(n+1)}{2}$
11. Which one of the following statements is incorrect?
    a) If $\overline{X}$ is the mean of n values of a variable X, then $\sum_{i=1}^{n}(x_i - \overline{X})$ is equal to 0

b) If $\overline{X}$ is the mean of n values of a variable X and a has any value other than $\overline{X}$, then $\sum_{i=1}^{n}(x_1-\overline{X})^2$ is the least value of $\sum_{i=1}^{n}(x_i-a)^2$

c) The mean deviation of the data is least when deviations are taken about mean

d) The mean deviation of the data is least when deviations are taken about median

12. The mean of n items is $\overline{X}$. If the first term is increased by 1, second by 2 and so on, then the new mean is

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

13. The standard deviation for the scores 1, 2, 3, 4, 5, 6 and 7 is 2. Then, the standard deviation of 12, 23, 34, 45, 56 , 67 and 78 is

a) 2 b) 4 c) 22 d) 11

14. The first of two samples has 100 items with mean 15 and SD=3. If the whole group has 250 items with mean 15.6 and $SD=\sqrt{13.44}$, the SD of the second group is

a) 4 b) 5 c) 6 d) 3.52

15. The GM of the series 1,2,4,8,16,...,2^n is

a) $2^{n+1/2}$ b) 2^{n+1} c) $2^{n/2}$ d) 2^n

16. The standard deviation of a variable x is 10. Then, the standard deviation of $50+5x$ is

a) 50 b) 550 c) 10 d) 500

17. The two lines of regression are given by $3x+2y=26\ and\ 6x+y=31$.The coefficient of correlation between x and y is

a) $-1/3$ b) $1/3$ c) $-1/2$ d) $1/2$

18. If θ is the angle between two regression lines with correlation coefficient y, then

a) $sin\theta \geq 1-\gamma^2$ b) $sin\theta \leq 1-\gamma^2$ c) $sin\theta \leq \gamma^2+1$ d) $sin\theta \leq \gamma^2-1$

19. The standard deviation of n observations $x_1,x_2,.....,x_n$ is 2. If $\sum_{i=1}^{n}x_i=20$ and $\sum_{i=1}^{n}x_i^2=100$, then n is

a) 10 or 20 b) 5 or 10 c) 5 or 20 d) 5 or 15

20. Median of ${}^{2n}C_0, {}^{2n}C_1, {}^{2n}C_2, {}^{2n}C_3, ..., {}^{2n}C_n$ (where n is even) is

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