Statistics

Q.No.1:
All the students of a class performed poorly in Mathematics. The teacher decided to give grace marks of 10 to each of the students. Which of the following statistical measures will not change even after the grace marks were given?

JEE 2013

   A. mean
   B. median
   C. mode
   D. variance

Q.No.2: The mean of the data set comprising of 16 observations is 16. If one of the observation valued 16 is deleted and three new observations valued 3, 4 and 5 are added to the data, then the mean of the resultant data, is : **JEE 2015**
   A. 16.8
   B. 16.0
   C. 15.8
   D. 14.0

Q.No.3: If $\sum_{i=1}^{9} (x_i - 5) = 9$ and $\sum_{i=1}^{9} (x_i - 5)^2 = 45$, then the standard deviation of the 9 items $x_1, x_2, ..., x_9$ is : **JEE 2018**
   A. 2
   B. 3
   C. 9
   D. 4

Q.No.4: 5 students of a class have an average height 150 cm and variance 18 cm^2. A new student, whose height is 156 cm, joined them. The variance (in

cm^2) of the height of these six students is:
  - **A.** 16
  - **B.** 22
  - **C.** 20
  - **D.** 18

Q.No.5: A data consists of n observations:
$x_1, x_2, ..., x_n$. If $\sum_{i=1}^{n}(x_i + 1)^2 = 9n$ and $\sum_{i=1}^{n}(x_i - 1)^2 = 5n$, then the
standard deviation of this data is: **JEE 2019**
  - **A.** 2
  - **B.** $\sqrt{5}$
  - **C.** 5
  - **D.** $\sqrt{7}$

Q.No.6: The mean of five observations is 5 and their variance is 9.20. If three
of the given five observations are 1, 3 and 8, then a ratio of other two
observations is: **JEE 2019**
  - **A.** 10 : 3
  - **B.** 4 : 9
  - **C.** 5 : 8
  - **D.** 6 : 7

Q.No.7: If mean and standard deviation of 5 observations x_1, x_2, x_3, x_4, x_5 are
10 and 3, respectively, then the variance of 6 observations x_1, x_2, ..., x_5 and –
50 is equal **JEE 2019**
  - **A.** 509.5
  - **B.** 586.5
  - **C.** 582.5
  - **D.** 507.5

Q.No.8: The outcome of each of 30 items was observed; 10 items gave a
outcome $\frac{1}{2} - d$ each, 10 items gave outcome $\frac{1}{2}$ each and the remaining 10
items gave outcome $\frac{1}{2} + d$ each. If the variance of this outcome data is $\frac{4}{3}$ then
$|d|$ equals: **JEE 2019**

A. $\frac{2}{3}$

B. 2

C. $\frac{\sqrt{5}}{2}$

D. $\sqrt{2}$

Q.No.9: If the sum of the deviations of 50 observations from 30 is 50, then the mean of these observations is: **JEE 2019**

    A. 30

    B. 51

    C. 50

    D. 31

Q.No.10: The mean and variance of seven observations are 8 and 16, respectively. If 5 of the observations are 2,4,10,12,14, then the product of the remaining two observations is :   **JEE 2019**

    A. 45

    B. 49

    C. 48

    D. 40