Experiment - 3

Page :
Date: / /

* Aim :- To find median for the given data.

* Experiment :- Find out the median of following data of ages of workers who are employeed at second shift of a small factory.

(a) 30, 40, 42, 35, 40, 38, 20, 41, 32, 22
(b) 30, 40, 42, 35, 40, 38, 20, 41, 32, 22, 39

Arranged in ascending order :-

(a) 20, 22, 30, 32, 35, 38, 40, 40, 41, 42
(b) 20, 22, 30, 32, 35, 38, 39, 40, 40, 41, 42

* Theory & Formula :-

Median :- Median is the value that divides whole data set into

Page :
Date: / /

two equal parts. Thus, it is a positional measure.

If no. of observations is odd

then

$$M_d = \frac{(n+1)^{th}}{2} \text{ term} \quad \text{---} \quad (1)$$

If no. of observations is even

then

$$M_d = \frac{\left(\frac{n}{2}\right)^{th} \text{term} + \left(\frac{n}{2}+1\right)^{th} \text{term}}{2} \quad \text{---} \quad (2)$$

* Result :- (a) Median is 36.5

(b) Median is 38

* Calculations :-

(a) no. of observations (n) = 10

using formula (2)

$$M_d = \frac{5^{th} \text{ term} + 6^{th} \text{ term}}{2}$$

$$M_d = \frac{35 + 38}{2}$$

$$[M_d = 36.5]$$

(b) $n = 11$

using formula (1)

$$M_d = \frac{11+1}{2} = \frac{12}{2}$$

$$M_d = 6^{th} \text{ term}$$

$$[M_d = 38]$$