

## EXPERIMENT NO: - 12

### Tutorial – 2

#### Examples

1) The past data on the load on the machine is shown below:

Sr. no.	Month	Load
1	May-17	-
2	June-17	585
3	July-17	610
4	Aug-17	675
5	Sep-17	750
6	Oct-17	860
7	Nov-17	970

a) Compute the load on the machine centre using 3rd and 5th moving average for the month of Dec. 1996.

b) Compute a weighted three month moving average for Dec. 1996 where the weights are 0.5 for last month, 0.3 and 0.2 other month respectively.

**Formulas:** The formula for a simple moving average is

$$F_t = \frac{A_{t-1} + A_{t-2} + A_{t-3} + \dots + A_{t-n}}{n}$$

The formula for a weighted moving average is

$$F_t = w_1A_{t-1} + w_2A_{t-2} + w_3A_{t-3} + \dots + w_nA_{t-n}$$

2) The past data regarding the sales of SPMS for the last five years is given. Using the least square method, fit a straight line, estimate the sales for the year 2013 and 2017.

Year	2013	2014	2015	2016	2017
Sales ('00)	35	56	79	80	40

3) N Forecast the demand for the following series by exponential smoothing method. (Take  $\alpha = 0.3$ )

Period	1	2	3	4	5	6	7	8	9	10
Actual demand	10	12	8	11	9	10	15	14	16	15