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ZOOLOGY (HONS)
PAPER - II

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TOPIC :- STANDARD ERROR

Standard Error:

S.E. is measure of chance variation and it is not an error or mistake. or the S.D. of the sampling distribution is called the S.E.

It is calculated by the ratio of S.D. of the sample is divided by the square root of the total no. of observation.

$$S.E. = \frac{S.D.}{\sqrt{N}}$$

WORK TO DO

Where, S.E = standard error
 S.D = standard deviation
 \sqrt{N} = square root of the total no. of observation.

Unpaired data:

Single Mean:-

Q. Size of five fishes in cm 2, 5, 3, 4, 1 respectively. Find out the S.E. of mean.

Solution:

Size of Fish X	$X - \bar{X} = d$ $\because \bar{X} = 3$	Deviation d	d^2
2	2 - 3	-1	1
5	5 - 3	+2	4
3	3 - 3	0	0
4	4 - 3	+1	1
1	1 - 3	-2	4

$\Sigma X = 15$
 $N = 5$

$\Sigma d^2 = 10$

$\therefore \bar{X} = \frac{15}{5} = 3$

$\therefore S.D. = \sqrt{\frac{\Sigma d^2}{N-1}} = \sqrt{\frac{10}{5-1}}$

$= \sqrt{\frac{10}{4}} = \sqrt{2.5} = 1.5$

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S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7	8	9	10	11	12		
13	14	15	16	17	18	19	20	21	22	23	24	25	26
27	28	29											

Putting the value of S.D. in the following formula —

$$S.E = \frac{S.D}{\sqrt{N}} = \frac{1.5}{\sqrt{5}} = \frac{1.5}{2.23}$$

$$= 0.67$$