Unit - 1 (INTRODUCTION)

CH - 2 Meaning & Scope of Statistics.

* What is STATISTICS ?? *

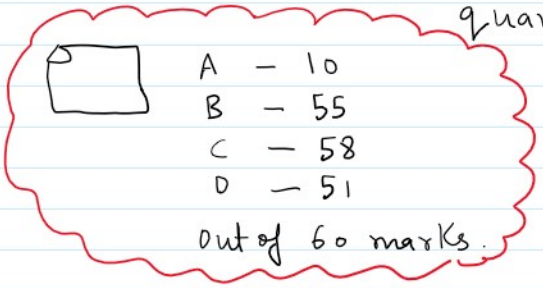
→ The systematic treatment of quantitative expression is known as statistics.

→ The term statistics is considered synonyms with the means of collecting, presenting and organising data and drawing relevant conclusions from it.

→ Thus, the word "statistics" refer to either to the quantitative information (plural sense) or to the method of dealing with quantitative information (singular sense)

10 Marks 55 marks 58 marks 51 marks collection

quantitative expression



CONCLUSION ↴

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* Statistics - PLURAL Sense (as Statistical Data)

3M

→ Statistics are aggregates of facts

eg :-

₹ 1000 is pocket money of Manas.

+ ₹ 800 " " " " Raju

+ ₹ 600 " " " " Pooja

→ Statistics are affected to a marked extent by multiplicity of causes.

eg :- Electricity Bill ₹ 5,000 ← Summer / Winter

Multiplicity of causes.

eg :- Electricity Bill ₹ 5,000 ← Summer, winter, charges
₹ 6,000 ← units consumed
affected etc etc

→ Statistics are numerically expressed

→ Statistics are enumerated or estimated according to reasonable standard of accuracy.

Enumeration means accurate numerical statement i.e it involves actual counting.

Sometimes when area is large then experts make estimations on the basis of observation

→ Statistics are collected in systematic manner

→ Statistics are collected for PRE-DETERMINED purpose

→ Statistics are placed in relation to each other.

* Statistics - SINGULAR SENSE (as Statistical Method)

→ Whenever a large amount of numerical data are collected, there arise a need to organise, present, analyse and interpret them. Statistical methods deals with these stages :-

71, 60, 2, 81, 100, 51, 22, 33, 40, 55,

— — — — — — — — — — 1000 students.

Stage 1 :- Collection of data

Stage 2 :- Organisation of data

Stage 3 :- Presentation of data – Tabular, Diagrams.

Stage 3 :- Presentation of data - Tabular, Diagrams.

Stage 4 :- Analysis of data - Mean, Median

Stage 5 :- Interpretation of data - drawing of conclusion.

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* FUNCTIONS OF STATISTICS.

(i) Statistics simplifies complex data.

(ii) Statistics presents the facts in a definite form.

eg :- If we want to study about inflation in the economy then statistics helps in providing the exact figure like inflation is 7% p.a, which is in a very definite form.

(iii) Statistics provides technique of comparison

(iv) Statistics studies relationship

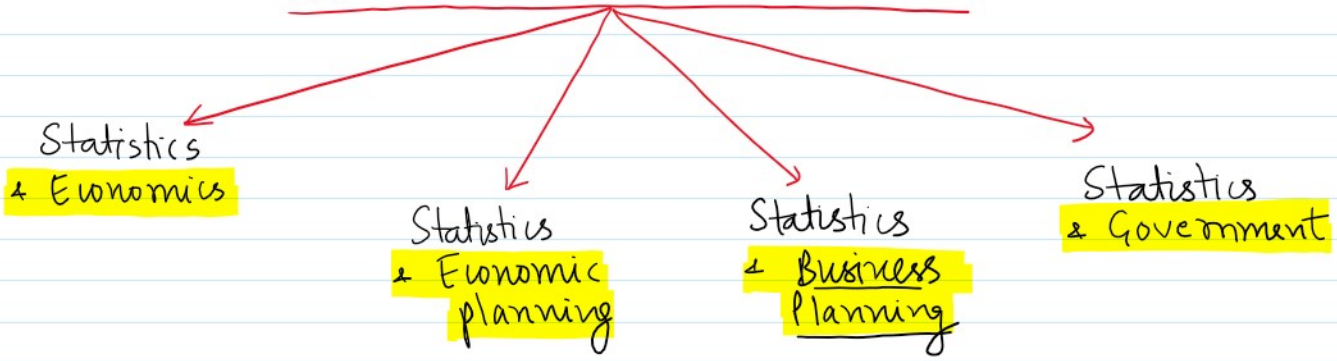
eg :- demand - supply relationship
Relationship between sugarcane prices and demand for sugar. etc

(v) Statistics helps in formulating policies

(vi) Statistics helps in forecasting

99%, 99%, 99.5%, ???

* IMPORTANCE OF STATISTICS *



planning planning

1. Statistics & Economics

→ Economic laws are evolved with the help of statistical tools.

→ A number of economic problems like unequal distribution of income & wealth, poverty etc can be easily understood with the help of statistical tools.

→ Statistics also can be helpful in identifying scarcity situations.

2. Statistics & Economic Planning

→ Economic planning is the best use of natural resources. Every stage in economic planning (drawing a plan, execution, review etc) is based on statistics.

→ there are various problems in underdeveloped countries. These problems can be understood easily with help of statistics.

(*) Planning without statistics is a ship without RADAR & COMPASS

3. Statistics & Business Planning

→ the manufacturer has to estimate demand for his goods. This is done by market research for which various statistical tools are used.

→ Insurance companies function on the basis of estimations of mortality rates, i.e life expectations and on this basis they calculate premiums.

premiums.

→ Other public utility bodies like Road Transporation Corporations, Railways etc also use statistical tools for their effient working

4. Statistics & Government

→ Before formulating policies government must consider certain statistics like taxes, wealth, employment etc.

→ Statistical techniques are used to analyse problems of a country & also helps in analysing the impact of a particular government policy (like demonetisation)

* LIMITATIONS OF STATISTICS * (3/4 M)

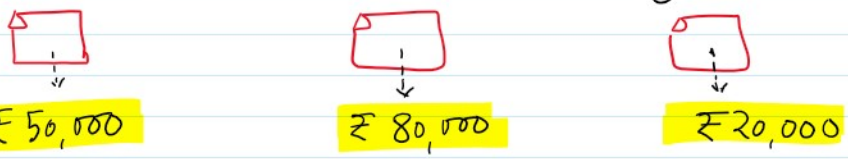
→ It doesnot study the qualitative aspect of a problem eg - Honesty, Intellegence etc

→ It doesnot study individuals.

eg - Raju's income is ₹ 1,000

→ Statistical results lack mathematical accuracy and are only true for an average.

eg.



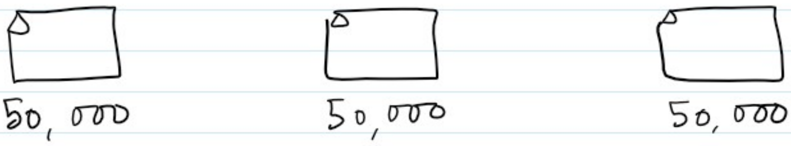
Statistical tools (Average) in work

$$= \frac{₹\,50000 + ₹\,80000 + ₹\,20000}{3}$$

Statistical Tools (Average) income of city $= \dfrac{₹ 50000 + ₹ 50000 + ₹ 50000}{3}$

$= \dfrac{₹ 150,000}{3}$

$= ₹ 50,000$



→ Statistics ==can be misused== - The results obtained can be manipulated according to one's own interest.

→ ==Expertise is required== for proper use of statistics

→ Statistical data should be ==Homogeneous==

eg:- ~~Rice production (Kgs)~~
~~Milk production (ltrs)~~
Heterogeneous.