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FACULTY OF ENGINEERING & TECHNOLOGY

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LECTURE- 11

BSc (AG)
2nd Year , IIIrd Sem.
Statistical Methods
AES-213

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Outline of lecture

- Measure of Central Tendency
- Numerical problems on mean, median & mode
- Type I & Type II problems
- Suggested Readings & References

Numerical problems based on Mean, Median & Mode

There are three types of numerical problems in mean, median and mode according to the given observations.

- Type I
- Type II
- Type III

We discuss one by one both types.

Numerical problems Type I & Type II

Measures of central Tendency
Mean, Median, Mode.

Type - I

Question :- Find the mean, Median and Mode of the following data.
5, 8, 17, 2, 3, 5, 4, 5.

Answer :- Mean $= \frac{5+8+17+2+3+5+4+5}{8}$

$= \frac{49}{8}$

$= 6.12$

Median = Arrange numbers in either acseeding or decending orders.

2, 3, 4, 5, 5, 5, 8, 17

$= \frac{5+5}{2}$

$= 5$

Mode = In the above data 5 comes more than other numbers so mode is 5.

Type - II

Question :- Find the mean, median and mode of. following frequency table

Mid value (x)	1	2	3	4	5
frequency (f)	2	3	4	7	7

Numerical problems Type I & Type II

(a) Mean $(\bar{x}) = \frac{\Sigma fx}{N}$

where, $N = \Sigma f$ or total frequency.

x	f	$f \cdot x$
1	2	2
2	3	6
3	6	18
4	7	28
5	9	45
	27	99
	$\Sigma f = N$	Σfx

So, mean, $\bar{x} = \frac{\Sigma fx}{N}$

$= \frac{99}{27} = \boxed{3.66.}$

(b) Median

$N = \Sigma f = 27$

$\frac{N}{2} = \frac{27}{2} = 13.5$

x	f	cumulative frequency
1	2	2
2	3	5
3	6	11
4	7	18
5	9	27

Suggested Readings & References

1) Statistical Methods: P.N. Arora, Sumeet Arora & S. Arora; S. Chand & Company Ltd.

2) Fundamental of Mathematical Statistics: S.C. Gupta & V. Kapoor; Sultan Chand & Sons.

3) Statistics: M.R. Spiegel; Schaum's Outline Series, Mc-Graw Hill Publication.

4) Advanced Engineering Mathematics: Erwin Kreyszig; John Wiley & Sons Inc.

5) Elements of Statistics: J.P. Chauhan & S. Kumar; Krishna Publication.

* THANK YOU *