

PRACTICAL MANUAL OF STAT 3202

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Welcome

Welcome to the book **PRACTICAL MANUAL OF STATISTICAL METHODS AND APPLICATIONS (STAT 3202)**.

Preface

Note: This book is published in MeLoN (Module for e-Learning & Online Notes) . The online version of this book is free to read here. You can download the PDF and take print out while submitting the records.

If you have any feedback, please feel free to contact Dr.Pratheesh P. Gopinath.
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This is a Practical Manual of STAT 3202 covering the syllabus of statistics course in B.Sc.(Hons.) Agriculture under Kerala Agricultural University

Chapter 1

Exercise 1

1.1 Construction of Frequency Distribution

Steps in construction of frequency distribution:

- Determine the number of classes
- Determine the class width
- Set up the individual class limits
- Tally the items into the classes
- Count the number of items in each class

Table below shows the data related to the grain yield in (g /plot) of a sorghum variety from experimental plots of equal area from a continuous frequency distribution. Prepare a frequency distribution and cumulative frequency distribution

| | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 194 | 129 | 166 | 164 | 154 | 139 | 128 | 120 | 80 | 168 |
| 150 | 186 | 156 | 179 | 153 | 157 | 155 | 115 | 676 | 171 |
| 118 | 143 | 191 | 148 | 152 | 187 | 129 | 119 | 139 | 177 |
| 191 | 214 | 167 | 165 | 186 | 111 | 155 | 164 | 125 | 99 |
| 86 | 170 | 111 | 169 | 141 | 164 | 89 | 180 | 225 | 139 |
| 127 | 136 | 144 | 165 | 154 | 74 | 156 | 142 | 162 | 160 |
| 171 | 134 | 177 | 178 | 168 | 165 | 188 | 131 | 154 | 107 |
| 189 | 156 | 176 | 150 | 142 | 144 | 153 | 190 | 183 | 180 |
| 161 | 170 | 195 | 136 | 91 | 187 | 152 | 145 | 98 | 166 |

SOLUTION:

Number of Classes, $k = 1 + 3.322 \log_{10} N =$

Class width, $C = | \max - \min | / k =$

Lower limit as $L = \min - \frac{c' - k' - (\max - \min)}{2} =$

Chapter 2

Exercise 2

2.1 Measures of Central Tendency

1. If the weights of 5 ear heads of sorghum are 100, 102, 118, 124 & 126, find the mean weight?
2. Calculate the mean value for the frequency distribution of weights of sorghum ear heads given below?

| Wt of ear head | 40-60 | 60-80 | 80-100 | 100-120 | 120-140 | 140-160 | 160-180 | 180-200 |
|----------------|-------|-------|--------|---------|---------|---------|---------|---------|
| number | 6 | 28 | 35 | 55 | 30 | 15 | 12 | 9 |

3. If the weight of sorghum ear heads are 45, 60, 48, 100 & 65, find the median.
4. Find out the median and mode for the frequency distribution of sorghum ear heads in question no. 2.
5. Calculate the mode value for the following frequency distribution

| C.I | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 |
|-------|------|-------|-------|-------|-------|-------|-------|-------|
| Freq. | 4 | 2 | 18 | 22 | 21 | 19 | 10 | 3 |

6. Find out the mean, median and mode for weekly wages of 100 workers in a farm

| Weekly.wages | Number.of.workers |
|--------------|-------------------|
| 20-24 | 4 |
| 25-29 | 5 |
| 30-34 | 12 |
| 34-39 | 23 |
| 40-44 | 31 |
| 45-49 | 10 |
| 50-54 | 8 |
| 55-59 | 5 |
| 60-64 | 2 |

7. The following data gives number of flowers observed from 20 plants. Find the arithmetic mean, geometric mean, harmonic mean.

42, 88, 37, 75, 98, 93, 73, 62, 96, 80, 52, 76, 66, 54, 73, 69, 83, 62, 53, 79

8. Table below gives the distribution of the heights of 60 students in a Senior High school. Find Q1 & Q3

| Height | 145-150 | 150-155 | 155-160 | 160-165 | 165-170 | 170-175 |
|-----------------|---------|---------|---------|---------|---------|---------|
| No: of students | 3 | 9 | 16 | 18 | 10 | 4 |

9. Find 25, 50 & 75 and D5 and Q2 for the frequency data given below

| class | frequency | cf |
|--------|-----------|-----|
| 0-10 | 11 | 11 |
| Oct-20 | 18 | 29 |
| 20-30 | 25 | 54 |
| 30-40 | 28 | 82 |
| 40-50 | 30 | 112 |
| 50-60 | 33 | 145 |
| 60-70 | 22 | 167 |
| 70-80 | 15 | 182 |
| 80-90 | 12 | 194 |
| 90-100 | 10 | 204 |

Chapter 3

References