

D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1.

RESEARCH METHODOLOGY AND BIOSTATISTICS (16CPZO4A)

SEMESTER – IV(Even)

UNIT-IV

SECTION-A

6 MARKS

1. Calculate the mean for the following data:

Marks	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of students	10	18	20	26	30	28	18

2. Calculate the median for the following data:

Size of shoes in inches	4	5	6	7	8	9
Frequency	10	15	22	16	12	5

3. The following table gives the wages of employees in two factories: In which factory, there is greater variation in the distribution of wages per employee?

	Factory A	Factory B
No. of employees	50	100
Average wage per month per worker	120	85
Variance of the wage per employee per month	9	16

4. Differentiate the mean, median and mode.

SECTION-B

15 Marks

1. Calculate the standard deviation for the following data:

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	5	10	20	40	30	20	10	4

UNIT-V**SECTION-A****6 MARKS**

1. A cross involving different genes gave rise to F_2 generation of tall and dwarf in the ratio of 110:90. Test by means of chi-square whether this value is deviated from the Mendel's monohybrid ratio 3:1 (The table value at 5% level of significance is 3.84).
2. Calculate Pearson's correlation coefficient.

X	12	18	16	15	12	10	20	17
Y	6	10	9	8	9	8	12	10

3. Explain the correlations and its various types.
4. Explain ANOVA.
5. Describe the kurtosis and skewness.
6. Describe about the chi-square test.

SECTION-B**15 Marks**

1. In a random sample of 10 persons selected from a population their heights noted to be

Height's in inches	63	63	66	67	68	69	70	71	72	73
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Discuss the suggestion that the mean height of the population is 66 using student "t-test" (The table value of t at 5% level of significance is 2.26).

2. A certain manure was used on four plots of land A, B, C and D. Four beds were prepared in each plot and the manure used. The output of the crop in the beds of plots A, B, C and D is given below:

A	B	C	D
6	15	9	8
8	10	3	12
10	4	7	1
8	7	1	3

Using ANOVA find out whether the difference in the means of the production of crops of the plots is significant or not.

3. When two heterozygous pea plants are crossed, 1600 plants are produced in the F₂ generation out of which 940 are yellow round, 260 are yellow wrinkled, 340 are green round and 60 are green wrinkled. By means of chi-square test, test whether these values are deviated from Mendel's dihybrid ratio 9:3:3:1. (or By means of chi-square test, test whether there is real independent assortment) (The table value for 5df at 5% level of significance is 7.81).
4. A group of 7 week old chickens reared on a high protein diet weigh 13, 16, 12, 17, 15, 15 and 17 ounces, a second group of 5 chickens similarly treated except that they receive a low protein diet weigh 9, 11, 15, 11 and 14 ounces. Using t-test, test whether there is significant evidence that additional protein has increased the weight of chickens (The table value of t at 10 df at 5% level of significance is 2.23).