

2021

STATISTICS — HONOURS — PRACTICAL

Paper : CC-1P

Full Marks : 30

*The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. A chemical compound containing 12.5% of iron was given to two technicians A and B for chemical analysis. A made of 15 determinations, and B 10 determinations, of the percentage of iron. The results are given in the following table :

Determination by A

12.46	12.43	12.77 – K
11.89	12.24	12.33
12.76	11.85 + K	12.56
11.95	12.12	12.65
12.77	12.43	12.13

Determination by B

12.21	12.33	11.97 + K	12.45	12.45
12.39	12.22	12.37	12.05	12.65 – K

where K stands for the last digit of your university roll number (eg, if the last digit of your university roll number is 4, then $K = 4$)

- (i) Identify if there is any outlier in the data set, separately for determination by A and B .
- (ii) Find separately for A and B various measures of central tendency and absolute dispersion after removing the outliers, if any.
- (iii) Also find their respective measures of relative dispersion. 12
2. In a survey of 80 houses the number of rooms (x) per house and the number of persons (y) living in it were recorded and the following frequency tables were obtained :

$x :$	1	2	3	4	5	6	7	8	9	Total				
frequency (f_x)	2	5	9	12	23	13	8	6	2	80				
$y :$	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
frequency (f_y)	1	2	4	6	9	10	16	11	8	5	4	3	1	80

Please Turn Over

Let z_x be the number of persons living in houses with x rooms. The following table was also obtained from the survey :

$x :$	1	2	3	4	5	6	7	8	9	Total
$z_x :$	3	18	68	76	102	113	89	55	37	561

- (i) Obtain the two regression lines and the angle between them.
- (ii) Compute the correlation coefficient between x and y . Also compute one of the correlation ratios and make your comment. 12

3. The following table gives the data on the results of a Visual Test and Balance Test performed on 413 male college students :

	Left-eyed	Ambiocular	Right-eyed	Total
Left handed	48	25	52	125
Ambidextrous	32	13	25	70
Right-handed	94	33	91	218
Total	174	71	168	413

Compute two measures of association and comment.

