UNIVERSITY OF KALYANI

B.A (HONOURS)3rd SEMESTER EXAMINATION-2020

COURSE CODE:GEO/H/CC/P/06:(PRACTICAL) STATISTICAL METHODS IN GEOGRAPHY

SRIKRISHNA COLLEGE,BAGULA,NADIA.

GEOGRAPHY PRACTICAL NOTE BOOK

ROLL:-3113137 NO:-2041303

REG NO:-037857

SESSION:-2020-2021

NOTE :
THIS ADMIT CARD HAS BEEN ISSUED SUBJECT TO RULES 22 PRINTED BELOW
IMPORTANT :
CANDIDATES ARE REQUESTED TO READ THE RULES PRINTED BELOW CAREFULLY BEFORE COMMENCEMENT OF THE EXAMINATION

BA/137/2022

2121041383

Kishor Paul

UNIVERSITY OF KALYANI

KALYANI UNIVERSITY

ADMIT

B.A. HONOURS 3rd SEMESTER EXAMINATION , 2021.
[C.B.C.S]

NAME: **KISHOR PAUL**

REGN NO: 037857 *SESSION:* 2020-2021

SON / DAUGHTER OF: KRISHNA PAUL

ROLL NO.	*COLLEGE*
3113137-2041303	SRIKRISHNA COLLEGE, BAGULA

HONOURS COURSE	:	**GEOHCC**	(Geography)
GENERIC ELECTIVE	:	**EDCHGE**	(Education)
SKILL ENHANCEMENT COURSE	:	**GEOHSE**	(Geography)

Bimalendu Biswas

Controller of Examination

RULES FOR GUIDANCE OF THE CANDIDATE

1. The examination will be held according to the programme previously notified.
2. The doors of the Examination Hall will be opened, half an hour on the first day and 15 minutes on subsequent days, before the time appointed for the commencement of the examination. Five minutes before the commencement of the examination, a Warning-Bell will be rung as a signal for all students to take their seats when all candidates must take their respective allotted seats bearing the Roll number given in the Admit Card.
3. Candidates shall bring their respective Admit Card and the University Registration Certificate every day of the Examination and shall produce them for inspection, whenever required. Candidates are liable to be expelled from the Examination Hall for failure to produce the Admit Card or the University Registration Certificate.
4. Candidate suffering from any form of contagious or infectious diseases, or from any illness or diseases considered to be prejudicial to the general body of students under examination, will not be admitted into or allowed to remain in the Examination Hall. Special arrangements may however, be made for candidates who are suffering from certain categories of diseases if application is made to the officer-in-charge with sufficient notice.
5. Before entering the Examination Hall candidates must deposit at a place set aside for the purpose books notes or other incriminating materials which are forbidden for candidates to have in their possession. Such articles may be left there only at the candidates' own risk. No clipboard, except absolutely bank one, should be used by a candidate as a support of the answer book during writing. Candidates found in possession of any incriminating materials(s) while under examination in contravention of these rules shall be liable to penalties including expulsion.
6. Under no circumstances will a candidate be allowed to appear at an examination at any place other than one approved by the University.
7. No candidate will be admitted or given a question paper more than 15 minutes after the examination has commenced provided that in special circumstances the officer-in-charge may admit a candidate who is late by not more than hall an hour. In such case(s) he/she must complete the examination within time as specified in the examination programme.
8. Communication of any sort or in any form is strictly forbidden between candidates and other person whether inside or outside the Examination Hall. Smoking in the Examination Hall is strictly forbidden.
9. Candidates are required to sign their names and prove their identity as and when required to do so.
10. Candidates shall use main answer books and additional loose sheets supplied by the University. The answer books and loose sheets should be properly filled in by the candidates. Candidates must not write their names, names of the colleges or any other things which may disclose their identity on any page of the answer books. Candidates must not write any objectionable or improper remarks in their answer books.
11. Candidates must not write anything on any question paper or other paper, or carry away any writing or scribblings from the Examination Hall.
12. No candidate will be allowed to leave the Examination Hall until an hour has elapsed from the time when the papers are given out.
13. No candidate shall be allowed to finally leave the Examination Hall without submitting the answer book tagged with all the loose sheets. No candidate shall be allowed to re-enter the Examination Hall during the hours of examination once leaving it after submission of the answer book.
14. A warning bell will be rung every day five minutes before the time fixed for the close of the examination.
15. At the close of the examination a candidate must remain seated until his/her answer book is collected by the invigilator. No candidate will be allowed to remain in the Examination Hall after the close of the examination, except to allow respective answer books to be collected by the invigilator.
16. Candidates are warned against any attempt to adopt unfair means at the examination. Any breach or attempted breach of any of these or other examination rules will render them liable to expulsion and to any other penalty as the University may deem it.
17. Non programming calculators not having memory safeguard facility may be used during examination for calculation purpose.
18. Applications for review of results, if permissible as per the regulation, must be submitted within 15 working days from the date of issue (as will be indicated on the body of the marksheet) to the relevant marksheets.
19. Candidates securing pass/qualifying marks in subject even after remaining absent in one or two papers at any University Examination (both P.G. and U.G.) will be considered to have passed/qualified in that subject if not otherwise specifically stated in the regulations for any particular examination, provided that such candidates who will remain absent in one or two papers in a subject may apply for cancellation of their examinations within 7 days of completion of the examination. Such cancellation shall be treated as loss of one chance.
20. Notwithstanding the issue of the Admit Card, the University shall have the right for any reasons which may appear to them sufficient, to cancel the admission of any candidate to any examination, whether before, during or after the examination. The University may also debar a candidate from appearing at any subsequent University Examination or Examinations. The decision of the University in all such cases shall be final.
21. In any case not covered by the foregoing rules, reference shall be made to the officer-in-charge for special direction, and his decision shall be accepted as final.
22. **Carrying Mobile Phone in Examination Hall is strictly prohibited.**

CONTENTS

ROLL- 3113137, NO-2041303

FREQUENCY DISTRIBUTION

Q-1

The data below give the marks secured by 70 candidates in a certain examination.

21, 31, 35, 52, 64, 74, 89, 53, 42, 7, 22, 35, 43, 67, 76, 35
46, 26, 32, 40, 72, 43, 38, 41, 63, 71, 28, 32, 45, 54, 15, 18
52, 73, 86, 50, 39, 55, 47, 12, 44 58, 67, 85, 39, 40, 50, 65
72, 69, 57, 63, 5, 56, 79, 37, 24, 54, 82, 49, 51, 54, 68, 29
34, 44, 58, 62, 59, 65

constract a frequency distribution of the marks talking classes of uniform width of 10 marks and '0' as the lower limit of the lower most class.

SOLUTION

CLASS LIMITS	CLASS BOUNDARY	TALLY MARKS	FREQUENCY (f)
0 – 10	0.05 – 10.5	II	2
11 – 20	10.5 – 20.5	III	3
21 – 30	20.5 – 30.5	𝍸, I	6
31 – 40	30.5 – 40.5	𝍸, 𝍸, III	13
41 – 50	40.5 – 50.5	𝍸, 𝍸, II	12
51 – 60	50.5 – 60.5	𝍸, 𝍸, III	13
61 – 70	60.5 – 70.5	𝍸, 𝍸	10
71 – 80	70.5 – 80.5	𝍸, II	7
81 – 90	80.5 – 90.5	IIII	4
			$\Sigma f = 70$

FREQUENCY DISTRIBUTION

HISTOGRAM AND FREQUENCY POLYGON

Q-2

Draw the Histogram and Frequency Polygoon of the following Frequency distribution of Height of 100 College students.

Height (cm)	141-150	151-160	161-170	170-180	181-190
Frequency (f)	5	16	56	19	4

SOLUTION

Table :- Calculation and drawing for Histogram and Frequency polygon.

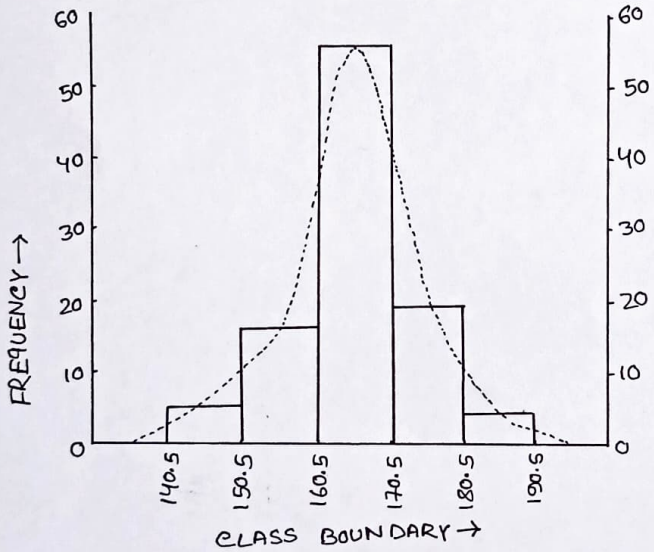
CLASS LIMIT	CLASS BOUNDARY	MID VALUE	CLASS WIDTH	FREQUENCY
141-150	140.5-150.5	145.5	10	5
151-160	150.5-160.5	155.5	10	16
161-170	160.5-170.5	165.5	10	56
171-180	170.5-180.5	175.5	10	19
181-190	180.5-190.5	185.5	10	4

Kishor PAUL

ROLL-3113137, NO- 2041303

HIST()GR/\M /\NI) FRE()UENCY P()LYG()N

SH()WING
HEIGHT ()F 1()() C()LLEGE STUI)ENTS



SC/\LE

HORIZONTAL - 1 CM TO 1 CLASS
VERTICAL - 1 CM TO 10 UNIT

Kishor Paul

FREQUENCY CURVE

Q-3

Draw a Frequency curve from the following Data.

CLASS BOUNDARY	9.5-29.5	29.5-49.5	49.5-69.5	69.5-89.5	89.5-109.5	109.5-129.5	129.5-149.5
FREQUENCY	4	7	11	15	10	8	5

SOLUTION

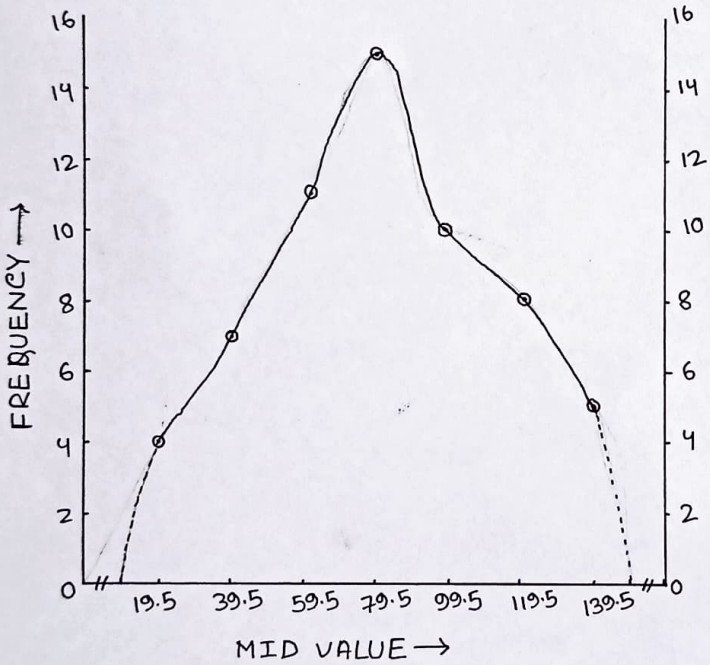
Table :- calculation and drawing for Histogram Frequency curve.

CLASS BOUNDARY	FREQUENCY	MID VALUE
9.5 - 29.5	4	19.5
29.5 - 49.5	7	39.5
49.5 - 69.5	11	59.5
69.5 - 89.5	15	79.5
89.5 - 109.5	10	99.5
109.5 - 129.5	8	119.5
129.5 - 149.5	5	139.5

Kishor Paul

ROLL- 3113137 , NO- 2041303

FREQUENCY CURVE



SCALE

HORIZONTAL- 1 CM TO 20 UNIT

VERTICAL- 1 CM TO 2 UNIT

Kishor Paul

ROLL- 3113137, NO- 2041303

()GIVE

Q-4 Draw a cumulative Frequency curve on ogive for the following Frequency Distribution.

CLASS LTMIT	50-59	60-69	70-79	80-89	90-99	100-109	109-119
FREQUENCY (NO. OF EMPOY)	8	10	16	14	10	5	2

SOLUTION

Table :- calculation and drawing for OGIVE.

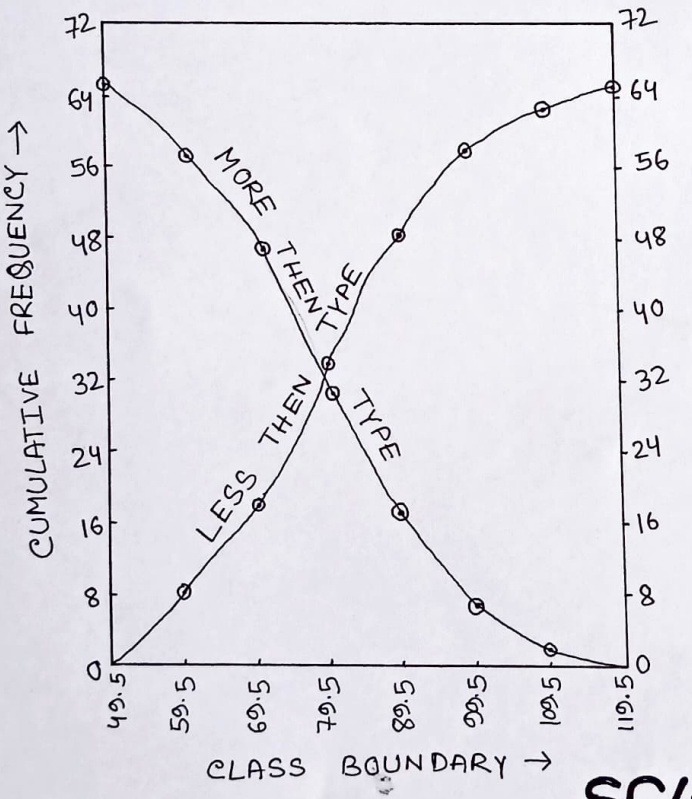
CLASS BOUNDARY	FREQUENCY (NO. OF EMPOY)	MID POINT	CUMULATIVE FREQUENCY	
			LESS THAN TYPE	MORE THAN TYPE
49.5 – 59.5	8	54.5	8	65
59.5 - 69.5	10	64.5	18	57
69.5 - 79.5	16	74.5	34	47
79.5 - 89.5	14	84.5	48	31
89.5 - 99.5	10	94.5	58	17
99.5 - 109.5	5	104.5	63	7
109.5 - 119.5	2	114.5	65	2

Kishor PAUL

ROLL-3113137, NO-2041303

OGIVE

SHOWING THE CUMULATIVE FREQUENCY



SCALE

HORIZONTAL- 1 CM TO CLASS BOUNDR
VERTICAL- 1 CM TO 8 FREQUENCY

Kishor Paul

MEASURES OF CENTRAL TENDENCY

ROLL- 3113137 NO-2041303

MEAN

Q-5 Calculation the simple mean price of a table from the following data assuming that weight are proportional to the number of sold.

Price per table (R.S)	36	40	44	48
NO. OF table SOLD	14	11	9	6

SOLUTION

TABLE :-

Price per table (u)	NO. OF Table sold (f)	fu
36	14	504
40	11	440
44	9	396
48	6	288
$\Sigma u = 168$	$\Sigma f = 40$	$\Sigma fu = 1628$

CALCULATION FOR MEAN :-

$$\bar{u} = \frac{\Sigma u}{n}$$

$$= \frac{168}{4}$$

$$= 42$$

∴ MEAN is - 42

Where,

$\bar{u}$ = mean

Σf = total Frequency

f = Frequency

n = NO. OF obsentation.

ROLL- 3113137, NO-2041303

MEAN

Q-6.- Find out the mean (Arithmetie mean) from the following data

CLASS LIMIT	10-19	20-29	30-39	40-49	50-59	60-69
FREQUENCY	4	12	18	10	5	7

TABLE:- SOLUTION

CLASS LIMIT	CLASS BOUNDARY	MID VALUE (u)	FREQUENCY (f)	SCALE 1cm to 2KM	fu
10-19	9.5-19.5	14.5	4	2	58
20-29	19.5-29.5	24.5	12	6	294
30-39	29.5-39.5	34.5	18	9	621
40-49	39.5-49.5	44.5	10	5	445
50-59	49.5-59.5	54.5	5	2.5	272.5
60-69	59.5-69.5	64.5	7	3.5	451.5
		$\Sigma u = 237$	$\Sigma f = 56$		$\Sigma fu = 2142$

$$\bar{u} = \frac{\Sigma u}{n} = \frac{237}{6} = 39.5$$

weighted mean = $\bar{u} = \frac{\Sigma fu}{n}$

$$\bar{u} = \frac{2142}{56}$$

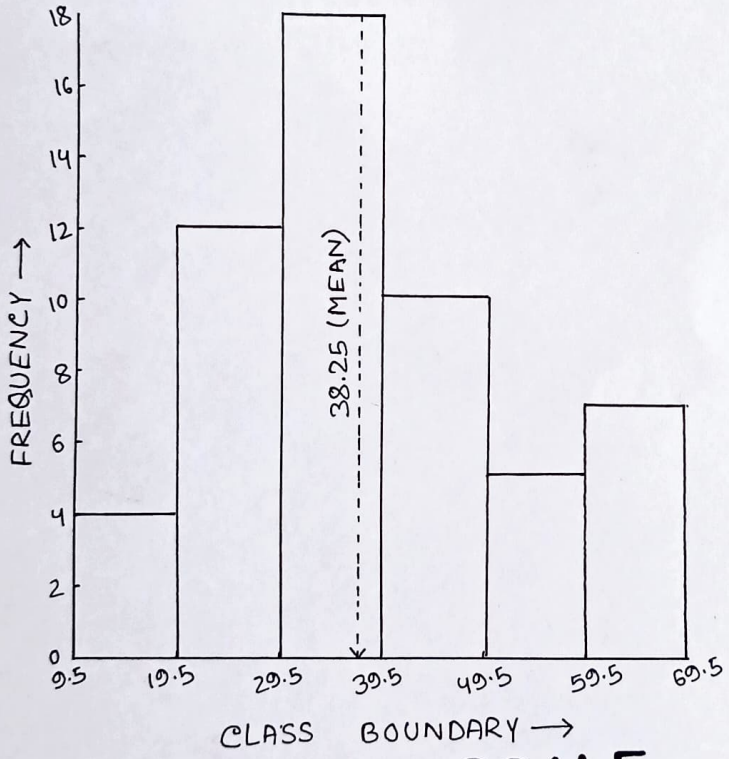
$$\bar{u} = 38.25$$

Kishor PAUL

ROLL- 3113137, NO- 2041303

HISTOGRAM

SHOWING THE MEAN VALUE



SCALE

HORIZONTAL- 1.5CM TO 1 CLASS BOUNDARY

VERTICAL- 1 CM TO 2 FREQUENCY

Kishor Paul

ROLL-3113137, 210-2041303

MEDIAN

Q:
calculation the median from the following data—

4.5, 18.3, 40.6, 39.8, 6.3, 10.5

SL.NO	1	2	3	4	5	6
Assending order	4.5	6.3	10.5	18.5	39.5	40.6

$$\text{Median} = \frac{N+1}{2}$$

$$= \frac{6+1}{2}$$

$$= \frac{7}{2}$$

$$= 3.5$$

$$\text{median} = \frac{10.5 + 18.3}{2}$$

$$= \frac{28.8}{2}$$

$$= 14.4$$

Kishor PAUL

ROLL-3113137, NO-2041303

MEDIAN

Q-8 :

Find out the median value from the falling data.

CLASS BOUNDARY	1100-1200	1200-1300	1300-1400	1400-1500	1500-1600
FREQUENCY	5	9	17	12	7

SOLUTION

CLASS BOUNDARY	FREQUENCY	CLASS INTERVAL	CUMULATIVE FREQUENCY	
			LESS THEN	MORE THEN
1100-1200	5	100	5	50
1200-1300	9	100	14	45
1300-1400	17	100	31	36
1400-1500	12	100	43	19
1500-1600	7	100	50	7

∴ Calculation of median :-

$$L_1 + \frac{N/2 - F}{Fm} \times i$$

$$= 1300 + \frac{25 - 14}{17} \times 100$$

$$= 1300 + \frac{1100}{17}$$

$$= 1300 + 64.70$$

$$= 1364.70$$

Where,

L_1 - Lower boundary of Median class

N - Total Frequency

F = Cumulative frequency below Lower boundary of median class

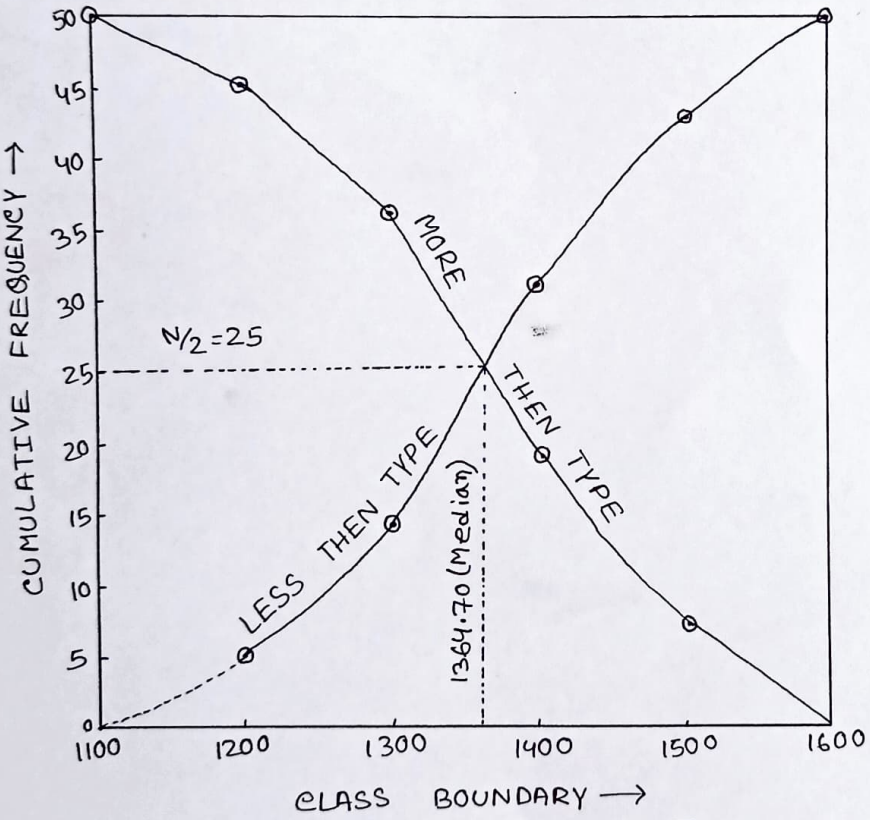
Fm - Frequency of median class

i = Interval.

Kishor PAUL

ROLL- 3113137 , NO- 2041303

GRAPHICAL CONSTRACTION OF MEDIAN



SCALE

HORIZONTAL- 2CM TO 1 CLASS BOUNDARY

VERTICAL - 1 CM TO 5 CUMULATIVE FREQUECY

ROLL-3113137, NO-2041303

MODE

Q-7 :- Find out the mode value from the following unequal class and showing the graphical position also.

CLASS BOUNDARY	0-75	75-200	200-400	400-500	500-850
FREQUENCY	5	10	26	7	14

SOLUTION

TABLE :

CLASS BOUNDARY	CLASS WIDTH	FREQUENCY (F)	FREQUENCY DENCITY
0-75	75	5	0.06
75-200	125	10	0.08
200-400	200	26	0.13
400-500	100	7	0.07
500-800	350	14	0.04

$$\text{Mode} = L + \frac{d_1}{d_1 * d_2} \times 200$$

$$= 200 + \frac{0.13 - 0.08}{(0.13-0.08) + (0.13 \times 0.07)} \times 200$$

$$= 200 + \frac{0.05}{0.05 + 0.06} \times 200$$

$$= 200 + \frac{0.05}{0.11} \times 200$$

$$= 200 + 90.90$$

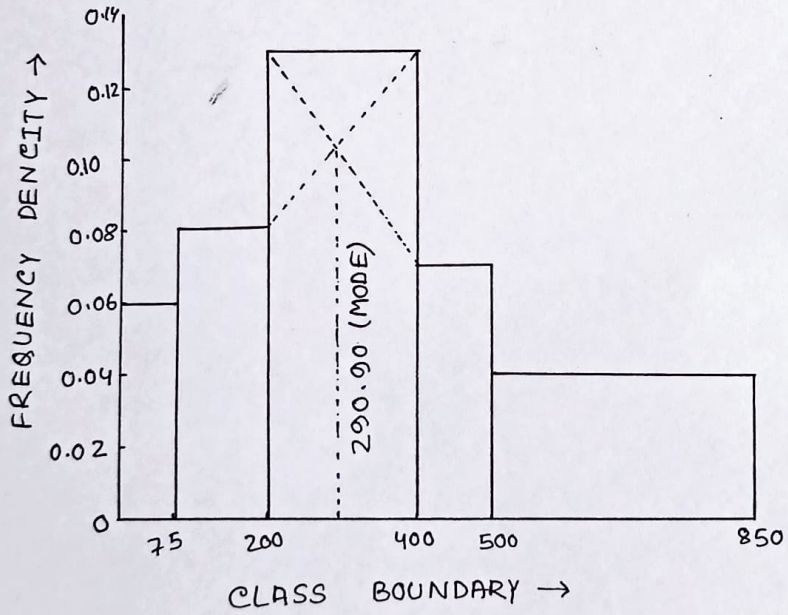
$$= 290.90$$

Kishor Paul

MODE IS = 290.90

ROLL- 3113137, NO- 2041303

GRAPHICAL CONSTRACTION OF MODE



SCALE

HORIZONTAL- 1 CM TO 100 CLASS BOUNDARY

VERTICAL - 1 CM TO 0.02 FREQUENCY DENCITY

Kishor Paul

MEASURES OF DISPERSION

ROLL- 3113137, NO-2041303

MEAN DEVIATION

Q-10 calculation the mean deviation from the following frequency table.

CLASS BOUNDARY	2-4	4-6	6-8	8-10	10-12	12-14	14-16
FREQUENCY	5	3	7	12	8	6	4

SOLUTION

CLASS BOUNDARY	MID VALUE	FREQUECY	fu	$\bar{u}$	$(u-\bar{u})$	$f(u-\bar{u})$
2-4	3	5	15	9	-6	-30
4-6	5	3	15	9	-4	-12
6-8	7	7	49	9	-2	-14
8-10	9	12	108	9	0	120
10-12	11	8	88	9	2	16
12-14	13	6	78	9	4	24
14-16	15	4	60	9	6	24
		$\Sigma f/N = 45$	$\Sigma fu = 413$			$\Sigma f(u-\bar{u}) = 120$

∴ calculation the mean $(\bar{u}) = \frac{\Sigma fu}{\Sigma f}$

$= \frac{413}{45}$

$= 9.1 = 9$

∴ Mean Deviation $= \frac{1}{N} \times \Sigma f(u-u)$

$= \frac{1}{45} \times 120$

$= 2.66$

∴ Mean Deviation is = 2.66.

Kishor PAUL

ROLL-3113137, NO-2041303

QUARTILE DEVIATION

Q-10 Compute the Quartile Deviation from the following values :-

SL. NO	1	2	3	4	5	6	7
VAUE (n)	4	8	10	16	16	27	32

$$Q_1 = \frac{1(n+1)}{4}$$

$$= \frac{1(7+1)}{4}$$

$$= \frac{8}{4}$$

$$= 2$$

SL. NO = 2

$Q_1 = 8$

$$Q_3 = \frac{3(n+1)}{4}$$

$$= \frac{3(7+1)}{4}$$

$$= \frac{24}{4}$$

$$= 6$$

$Q_3 - 27$

$$\therefore \text{Quartile Deviation} = \frac{Q_3 - Q_1}{2}$$

$$= \frac{27-8}{2}$$

$$= \frac{19}{2}$$

$$= 9.5$$

$\therefore$ therefore Quartile Deviation is 9.5.

Kishor PAUL

STANDARD DEVIATION

Q-9 ∴ calculate the standard Deviation of House Hold Side frame the following frequency Distribution of 450 House hold

HOUSE SOLD size	6	4	3	7	5	2	10	9
NUMBER OF HOUSE HOLD	90	38	57	62	85	46	25	47

SOLUTION

HOUSE HOLD (u)	NUMBER HOUSE (f)	fu	$\bar{u}$	$u-\bar{u}$	$\lvert u-\bar{u}\rvert$	$(u-\bar{u})^2$	$f(u-\bar{u})^2$
6	90	114	5.53	0.47	0.47	0.22	19.8
4	38	152		-1.53	1.53	2.34	88.92
3	57	171		-2.53	2.53	6.40	364.8
7	62	434		1.47	1.47	2.16	133.92
5	85	425		-0.53	0.53	0.28	23.8
2	46	92		-3.53	3.53	12.46	573.16
10	25	250		4.47	4.47	19.98	499.5
9	47	423		3.47	3.47	12.04	565.88
	$\Sigma f = 450$	$\Sigma fu = 2061$					$\Sigma f(u-\bar{u})^2 = 2269.78$

∴ Calculation the standard deviation ∴-

$$= \sqrt{\frac{1}{N}\Sigma f(u-\bar{u})^2}$$

$$= \sqrt{\frac{1}{450} \times 2269.78}$$

$$= \sqrt{5.04}$$

Standard deviation = 2.24

Kishor Paul

ROLL- 3113137, NO-2041303

CO-EFFICIENT VARIATION

Q-12 Annual rainfall of 2 meteorological station are given below

A- Find out the CO-EFFCIENT VERIATION of rainfall of the above 2 station

B - which station is more consistant in the distribution of annual rainfall

year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Station (A)	200	140	225	225	120	180	220	210	90	110	210
Station (B)	280	275	265	268	270	265	261	272	250	255	272

Solution

year	Station (A)	$\bar{u}$	$(u-\bar{u})$	$(u-\bar{u})^2$
1990	200	172.27	27.73	768.95
1991	140	172.27	-32.27	1041.35
1992	190	172.27	17.73	314.35
1993	225	172.27	52.73	2780.45
1994	120	172.27	-52.27	2732.15
1995	180	172.27	-7.73	59.75
1996	220	172.27	47.73	2278.15
1997	210	172.27	37.73	1423.55
1998	90	172.27	-82.27	6768.35
1999	110	172.27	-62.27	3877.55
2000	210	172.27	37.73	1423.55
	$\Sigma u = 1895$			$\Sigma(u-\bar{u})^2 = 23468.18$

Kishor PAUL

P.t.O →

ROLL-3113137, NO-2041303

- calculation for mean $(\bar{u}) = \frac{\Sigma u}{n} = \frac{1895}{11}$

$= 17.27$

- calculation for Standard Deviation $= \sqrt{\frac{1}{11} \cdot \Sigma(u-\bar{u})^2}$

$= \sqrt{\frac{1}{11} \times 23468.15}$

$= \sqrt{\frac{23468.15}{11}}$

$= 46.18.$

- calcuation for co-efficient of variation $= \frac{\text{standard Deviation}}{\text{mean}} \times 100$

$= \frac{46.18}{172.27} \times 100$

$= 26.81$

Station = B.

year	station (B)	$\bar{u}$	$(u-\bar{u})$	$(u-\bar{u})^2$
1990	280	266.63	13.37	178.75
1991	275	266.63	3.37	70.05
1992	265	266.63	-1.63	2.65
1993	268	266.63	1.37	1.87
1994	270	266.63	3.37	11.35
1995	265	266.63	1.63	2.65
1996	261	266.63	5.63	31.69
1997	272	266.63	5.37	28.83
1998	250	266.63	16.63	276.55
1999	255	266.63	11.63	135.25
2000	272	266.63	5.37	28.83
				$\Sigma(u-\bar{u})$ = 768.47

Kishor PAUL

P.t.O →

ROLL- 3113137, NO-2041303

- calculation for mean $(\bar{u}) = \frac{\Sigma u}{n}$

$$= \frac{2933}{11}$$

$$(\bar{u}) = 266.63$$

- calculation for Standard Deviation =

$$\sqrt{\frac{1}{N}\Sigma(u-\bar{u})^2}$$

$$= \sqrt{\frac{1}{11} \times 768.47}$$

$$= \sqrt{\frac{768.47}{11}}$$

$$= \sqrt{69.86}$$

$$= 8.35$$

- calculation for co-efficient of ramietion =

$$\frac{\text{Standard Deviation}}{\text{Mean}} \times 100$$

$$= \frac{8.35}{266.63} \times 100$$

$$= \frac{8.35}{266.63} \times 100$$

$$= \frac{835}{266.63}$$

$$= 3.13$$

∴ More consistensity is station 'B'

Kishor Paul

ROLL-3113137, NO-2041303

RESIDUAL MAP AND SCATTER DIAGRAM

Q- DRAW a residual map concerning spatial distribution of CROP Intensity of Birbhum District.

SL NO	NAME OF BLOCK	AREA UNDER IRRIGATION IN KM² (2010-11)	CROPPING INTENSITY % (2010-11)
1	Murarai - I	54.95	164.46
2	Murarai - II	63.08	104.1
3	Nalhati - I	96.9	151.18
4	Nalhati - II	148.64	235.34
5	Rampurhat - I	114.2	119.21
6	Rampurhat - II	190.01	163.59
7	Mayureswar - I	166.92	115.36
8	Mayureswer - II	228.6	197.45
9	Mohammad Bazer	109.09	84.18
10	Rajnagar	12.79	96.6
11	Suri - I	19.7	75.93
12	Suri - II	112.95	156.68
13	Sainthia	257.65	221.32
14	Labpur	200.69	121.02
15	Nanoor	60	139.77
16	Bolpur	183.39	93.73
17	Illambazer	96.4	113.65
18	Dubrajpur	107.66	59.19
19	Khoyrasol	53.16	43.21

Kishor PAUL

Pto →

ROLL- 3113137, NO- 2041303

☑ TABLE = COMPUTATION OF REGRESSION EQUATION —

NAME OF BLOCK	ARER UNDER KM² (u_i)	CROPPING INTESITY (y_i)	u_i^2	y_i^2	$u_i y_i$	$y_c = 7988 + 0.41$	Residuals $\frac{y}{1} - \frac{y_c}{y}$
MURARAI-I	54.95	164.46	3019.50	27047.09	9037.08	102.528	0.37
MURARAI-II	63.08	104.1	3979.09	10836.81	6566.63	105.878	0.01
NALHATI-I	96.90	151.18	9389.61	22855.39	14649.34	119.812	0.20
NALHATI-II	148.64	235.34	22093.85	55384.92	34980.94	141.130	0.40
RAMPURHAT-I	114.20	119.21	13041.64	14211.02	13613.78	126.940	0.06
RAMPURHAT-II	190.01	163.59	36103.80	26761.69	31083.74	158.176	0.03
MAYUREWAR-I	166.92	115.36	27862.29	13307.93	19255.89	148.662	-0.98
MAYUREWER-II	228.60	197.45	52257.96	38986.50	45137.07	174.075	0.11
MOHAMMAD BAZAR	109.09	84.18	11900.63	7086.27	9183.20	124.835	0.48
RAJNAGAR	12.79	96.6	163.58	9331.56	1235.51	85.157	0.11
SURI-I	19.70	75.93	388.09	5765.36	1495.82	88.004	-0.15
SURI-II	112.95	156.68	12757.70	24548.62	17691.01	126.425	0.19
SAINTHIA	257.65	221.32	66383.52	48982.54	57023.10	186.045	0.15
LABPUR	200.69	121.02	40276.48	14645.84	24287.50	162.576	-0.34
NANOOR	60.00	139.77	3600.00	19535.65	8386.20	104.609	0.25
BOLPUR	183.39	93.73	33631.89	8785.31	17189.14	155.448	-0.65
ILLAMBAZER	96.40	113.65	9292.96	12916.32	10955.86	119.606	-0.05
BUBRAJPUR	107.66	59.19	11590.68	3503.46	6372.40	124.246	-1.21
KHOYRASOL	53.16	43.21	2825.99	1867.10	2297.04	101.791	-1.35
	Σu_i = 2276.78	Σy_i = 2455.98	Σu_i^2 = 360559.26	Σy_i^2 = 366359.38	$\Sigma u_i y_i$ = 330447.25		

Kishor PAUL

P.T.O →

SOLUTION

Absolute residual,

$$e_i = (y_i - y_c)$$

or,

$$y_c = a + bu_i$$

$$b = \frac{\Sigma u_i y_i - \frac{\Sigma u_i \Sigma y_i}{n}}{\Sigma u_i^2 - \frac{(\Sigma u_i)^2}{n}}$$

$\therefore$ $a = \bar{y} - b\bar{u}$

u_i - Independent varible.

y_i = Dependent variable

y_c = PREdected dependent variable

b = Regression co-effcient

a = 'y' Intercepts

$\bar{y} = \Sigma \frac{y_i}{n}$, $u = \frac{\Sigma u_i}{n}$

n = no of pairs.

$$b = \frac{\Sigma u_i y_i - \frac{\Sigma u_i \Sigma y_i}{n}}{\Sigma u^2 - \frac{(\Sigma u)^2}{n}}$$

or, $$b = \frac{330747.25 - \frac{2276.78 \times 2455.97}{19}}{360559.26 - \frac{(2276.78)^2}{19}}$$

or, $$b = \frac{36147.07}{360559.26 - 272827.75}$$

or, $$b = \frac{36147.07}{87731.51}$$

or, $$b = 0.41202$$

Kishor PAUL

ROLL-3113137, NO-2041303

☑ y intercep, $a = \bar{y} - b\bar{u}$

$= 129.26 - 0.41202 \times 119.83$

$= 129.26 - 49.37232$

$a = 79.88764$

⊙ $\bar{y} = \frac{\Sigma y_i}{n}$

$= \frac{2455.07}{19}$

$= 129.26$

⊙ $\bar{u} = \frac{\Sigma u_i}{19}$

$= \frac{2276.78}{19}$

$= 119.83$

$y_c = a + bu$

$= 79.88764 + 0.41202 \times 54.95$

$= 102.53$

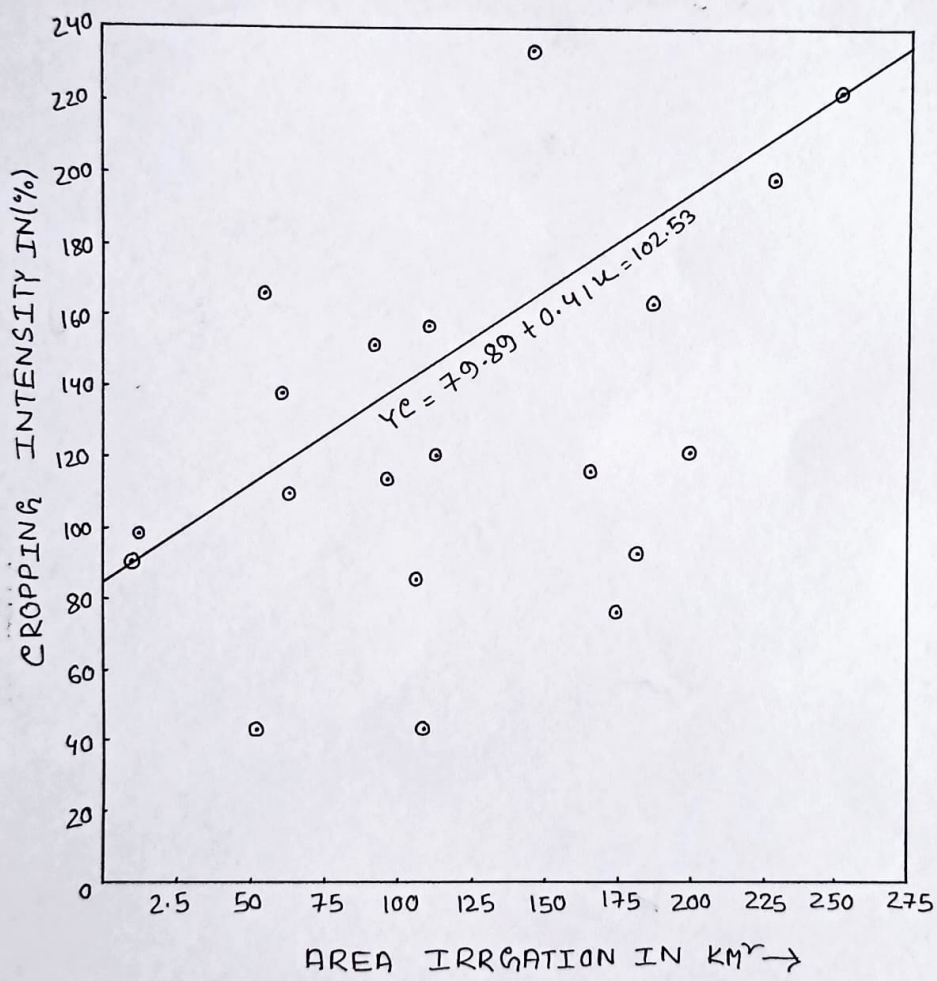
Kishor Paul

ROLL-3113137, NO-2041303

SCATTER DIAGRAM

SHOWING

THE RELATIONSHIP BETWEEN AREA UNDER IN AND CROPPING INTENSITY IN(%)



INDEX

SCATTER POINT

REGRASSION LINE

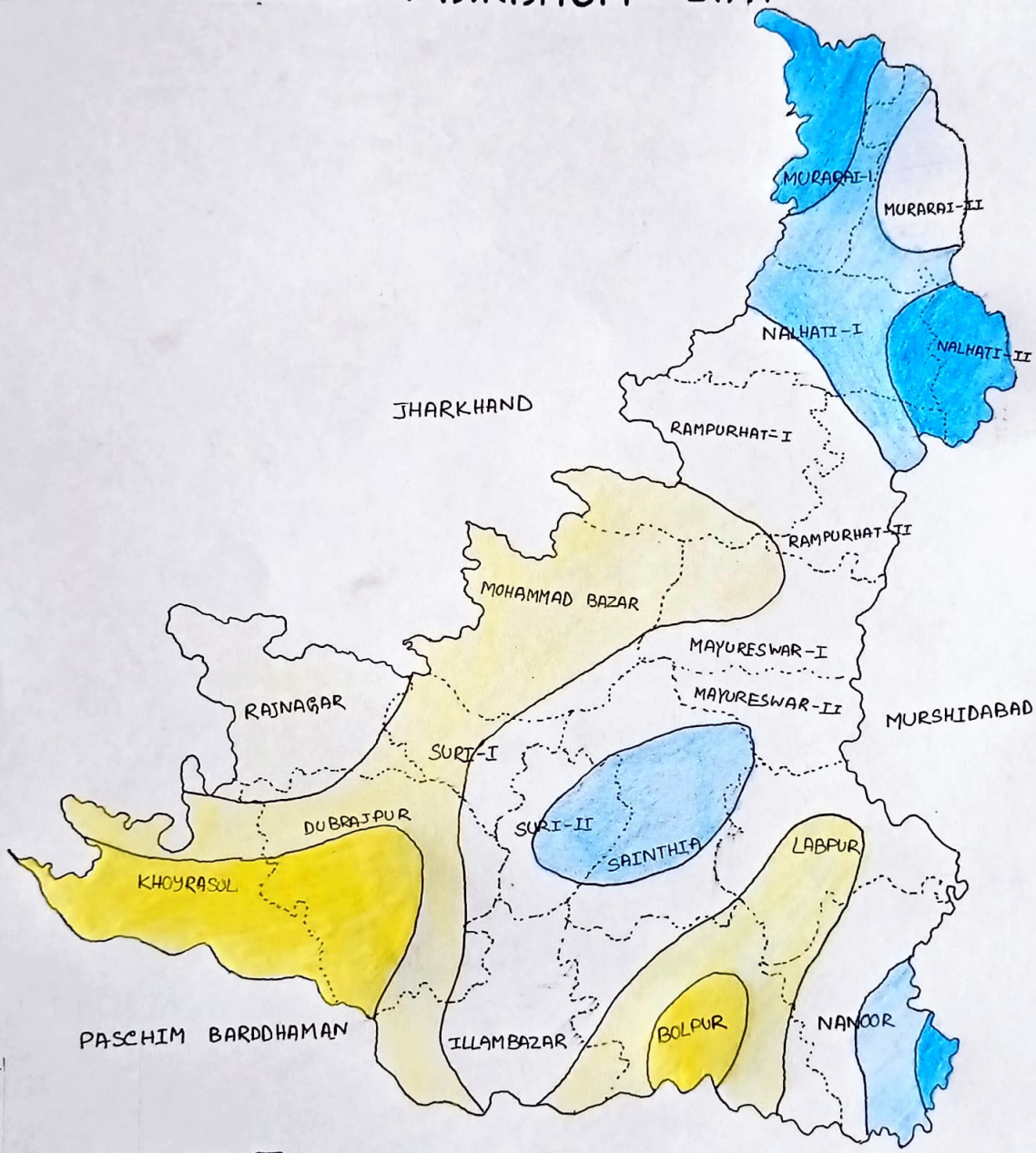
SCALE

HORIZONTAL- 1CM TO 25 UNIT

VERTICAL - 1CM TO 20 UNIT

Kishor PAUL

RESIDUAL MAP
SHOWING
SPATIAL CORRESPONDENCE BETWEEN TOTAL AREA AND CROP INTENSITY BIRBHUM - 2011



SCALE

10 5 0 10 20 KM

INDEX
ABSOLUTE RESIDUALS(%)

(+)		(−)	
50%	HIGH(+)VE	50%	HIGH(−)VE
25%	MEDIUM(+)VE	25%	MEDIAN(−)VE
0	ZONE OF MAX	0	ZONE OF MXX

Kishor Paul