INDIAN STATISTICAL INSTITUTE

QUESTION PAPERS

for

The Computer's Certificate Examination

&

The Statistical Field Survey Examination

1954

Price Re 1/-

INDIAN STATISTICAL INSTITUTE

COMPUTER'S CERTIFICATE EXAMINATION, 1954.

Part 1A : Section 1.

Time : 3 hours

N.B. (a) Answers to the different groups are to be given in separate books.
(b) Attempt any two questions from each group.
(c) All questions carry equal marks.
(d) Use of calculating machines is not permitted.

Group A.

1. The table below gives area under cultivation in thousands of acres and production in thousands of tons of certain agricultural items in a certain state. Construct a table showing acreage and production under the five heads : (i) cereals, (ii) pulses, (iii) oilseeds, (iv) fibres, and (v) other crops.

	Crop	Area (.000 acres)	Production (.000 tons)
1.	Rice	755	203
2.	Arhar	107	27
3.	Wheat	240	66
4.	Moong	93	21
5.	Jowar	382	52
6.	Sugarcane	42	55
7.	Cotton	139	6
8.	Jute	15	6
9.	Potato	6	16
10.	Groundnut	105	33
11.	Rape & mustard	55	8

2. A set of figures are given below : (i) arrange the numbers which are divisible by 2, in ascending order of magnitude, (ii) arrange all the numbers in descending order of magnitude but omitting any of them so that two odd or two even numbers do not appear consecutively, (iii) arrange all the numbers in ascending order of magnitude and then pick out the 1st, 6th, 11th, 16th, 21st and the 26th.

53	32	86	20	96	72
22	84	78	65	62	83
87	29	93	73	85	46
90	57	18	46	59	54
25	20	72	89	45	

3. Copy down neatly after correcting mistakes

TABLE SHOWING NUMBER OF CANDIDATES APPEARING IN DIFFERENT SUBJECTS AT DIFFERENT CENTRES.

Centre	Subject					Total
	Vernacular	English	Mathematics	Natural Sciences	History & Geography	
1. Allahabad	85	78	80	101	47	391
2. Bombay	184	157	175	196	83	795
3. Calcutta	203	292	183	193	86	962
4. Delhi	197	233	193	201	95	919
5. Madras	66	82	87	107	43	385
Total	740	842	1438	798	354	3452

GROUP B.

4. (i) Complete the entries in the following table in respect of the column (4) to (8), and find the total for each column.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Sl.	x	y	$(x-\bar{x})$	$(y-\bar{y})$	$(x-\bar{x})^2$	$(y-\bar{y})^2$	$(x-\bar{x}(y-\bar{y})$
1	0.2	0.03					
2	2.0	0.17					
3	1.4	0.02					
4	0.3	0.06					
5	1.0	0.01					
6	0.0	0.13					
7	0.1	0.05					
8	1.3	0.12					
9	0.6	0.07					
10	1.1	0.04					
Total							

where $\bar{x} = 0.8$ and $\bar{y} = 0.07$

(ii) From the above table find the values of

$$\frac{\Sigma(x-\bar{x})(y-\bar{y})}{\Sigma(x-\bar{x})^2}, \frac{\Sigma(x-\bar{x})(y-\bar{y})}{\Sigma(y-\bar{y})^2} \text{ and } \frac{\Sigma(x-\bar{x})(y-\bar{y})}{\sqrt{\Sigma(x-\bar{x})^2\Sigma(y-\bar{y})^2}}$$

where $\Sigma(x-\bar{x})^2$, $\Sigma(y-\bar{y})^2$ and $\Sigma(x-\bar{x})(y-\bar{y})$ denote respectively the totals of col. (6), col. (7) and col. (8).

5. The following table shows the number of employees falling in the different pay groups and their percentages to the total number of employees during the years 1951 and 1952.

Year 1951 Pay group (Rs.)	Number of employees	Percentage to total number of employees
41— 100	41215	32.64
201— 250	2097	1.61
0— 40	66026	52.29
above 2000	58	0.05
301— 350	464	0.37
501— 800	501	0.40
1001—1500	97	0.08
251— 300	1172	0.93
151— 200	4584	3.63
801—1000	106	0.08
1501—2000	43	0.03
351— 500	732	0.58
101— 150	9235	7.31
Total	126270	100.00

Year 1952 Pay group (Rs.)	Number of employees	Percentage to total number of employees
above 2000	59	0.05
0— 40	70440	52.81
501— 800	526	0.40
1501—2000	43	0.03
151— 200	4745	3.56
251— 500	2442	1.82
801—1000	119	0.09
41— 100	42624	31.96
201— 250	2193	1.64
1001—1500	106	0.08
101— 150	10087	7.56
Total	133384	100.00

Show in a suitable tabular form the number of employees in the pay groups (in rupees) 0—100, 101—500, 501—1000 and 'above 1000' and their percentages to the total number of employees during 1951 and 1952.

6. The following table shows the average size of household, consumption of milk in seers per 100 households, per 100 persons and per person in the different rural areas of the different parts of India during the period from July 1949 to June 1950.

Check up the figures, in the different columns of the table and copy the table after correcting the errors. (Cols. (2) and (3) may be taken as correct).

Population Zone	Average size of household	Quantity of milk consumed in seers		
		per 100 household	per 100 persons	per person
(1)	(2)	(3)	(4)	(5)
1. North India	5.27	12741	2418	23.18
2. East India	5.36	6277	627.70	1.17
3. South India	4.98	6536	653.60	13.12
4. West India	5.47	16471	164.71	1.65
5. Central India	4.98	9010	1809	1.809
6. North West India	5.27	34823	6608	6.07
All combined (India)	5.21	11421	2102	21,02

COMPUTER'S CERTIFICATE EXAMINATION, 1954.

PART 1A : SECTION 2.

Time : 3 hours

N.B. (a) Answers to the different groups are to be given in separate books.
(b) Attempt any two questions from each group.
(c) All questions carry equal marks.
(d) Use of calculating machines is not permitted.

GROUP A.

1. (a) Solve the equation $16x^2-112x+147=0$

(b) Find the value of 678.4356×121.7924 by contracted multiplication (correct upto 2 places of decimal).

2. (a) A man bought sugar from several shops, as detailed below. P says that the average price per seer of sugar would be obtained by dividing the sum of column 3 by 7 and Q says that it would be obtained by dividing the sum of column 4 by the sum of column 2. What is the average price of a seer of sugar if all the quantities are mixed up and sold without gain or loss ? Who (among P & Q) do you think will agree with this value ?

Shop	Quantity bought	Rate per seer			Total price paid		
(1)	(2)	(3)			(4)		
		Re.	a.	p.	Re.	a.	p.
A	16 seers	0	13	6	13	8	0
B	5 seers	0	12	3	3	13	3
C	20 seers	1	2	6	23	2	0
D	7 seers	0	13	9	6	0	3
E	6 seers	0	12	6	4	11	0
F	11 seers	0	12	0	8	12	3
G	3 seers	0	11	9	2	3	3

(b) Assuming the average price of a seer of sugar (as obtained above) as base, express the price of a seer of sugar at the shops B and D as an index of the same.

3. (a) Calculate the mean and the standard deviation of the following set of weight records.

21, 24, 24, 27, 27, 27, 35, 37, 40, 43, 45, 45, 47, 47, 48, 48, 49, 49, 50, 50, 50, 52, 56, 56, 57, 57, 59, 61, 63, 63, 63, 63, 63, 64, 65, 67, 69, 71, 71, 72, 72, 73, 76, 87 and 88

(b) Calculate the standard error of the mean calculated above.

Group B.

4. A colony of 475 mosquitoes was exposed to a spray of D.D.T. and the number alive were observed at intervals of one minute and shown in the table below.

Table

At time "t" minutes after spray of D.D.T.	The number alive at time "t"
0	475
1	320
2	215
3	145
4	97
5	66

Calculate by simple interpolation

(a) Time taken to kill 75% of the mosquitoes.

(b) The percentage of mosquitoes that will be killed in 1.786 minutes.

5. The following table gives the acreage under jute cultivation and harvest price of jute in West Bengal for the 10 year period 1939-48 (price for 1948 not recorded).

Table

Year	acreage in 000 acres	price Rs./md.	Year	acreage in 000 acres	price Rs./md.
1939	174	9— 8— 0	1944	194	11— 0— 0
1940	577	4—10— 0	1945	203	12— 0— 0
1941	181	8— 8— 0	1946	152	18— 0— 0
1942	282	10— 0— 0	1947	229	27—12— 0
1943	241	10—12— 0	1948	315	—

Represent the relationship between acreage and price of jute graphically by taking suitable scales.

6. If a thin disc of diameter 1 foot is placed in a slit of 6 inches length, find graphically the area of the portion of the disc that will pass through the slit.

COMPUTER'S CERTIFICATE EXAMINATION, 1954.

PART 1B : SECTION 1.

Time : 3 hours.

N.B. (a) Answers to the different groups are to be given in separate books.
(b) Figures in the margin indicate full marks.
(c) Use of calculating machines is permitted.

GROUP A.

1. The following data were collected in a crop-cutting experiment on Jute in a village of West Bengal in 1953, in which the weights of green plants and dry jute fibre were recorded for 40 individual plants chosen at random. Obtain linear regression equation of weight of dry fibre on weight of green plant. Find also the correlation coefficient. (30)

TABLE

plant	weight in tolas		plant	weight in tolas	
	green plant	dry fibre		green plant	dry fibre
1	93	6.8	21	51	3.8
2	89	6.3	22	87	6.0
3	112	7.0	23	81	6.4
4	8	0.6	24	47	3.0
5	93	6.5	25	54	3.9
6	11	0.7	26	48	3.4
7	16	0.7	27	33	4.1
8	32	2.0	28	68	5.1
9	31	2.7	29	106	7.0
10	37	3.0	30	56	4.4
11	46	3.3	31	37	2.8
12	35	2.7	32	36	2.3
13	30	2.1	33	47	3.5
14	8	0.5	34	33	2.5
15	23	1.9	35	102	7.0
16	33	2.7	36	17	1.3
17	18	1.7	37	59	4.5
18	70	5.3	38	87	6.0
19	87	6.2	39	62	4.2
20	74	11.5	40	54	3.9

Draw the scatter diagram and show the regression line.

Or

From the table of Question 1 calculate the first four central moments and β_1 and β_2 for the weight of green plant.

2. The following is a classified list of value of products (Rupees) sold by different selling Agents of a certain Farm in different districts : (20)

(a) Re-classify these Sale figures by districts for each individual product.

(b) Find the total sale figures in rupees for each District and each Product.

Dis-trict	Ag ent	Pro-duct	Total sold (Rs.)	Dis-trict	Ag-ent	Pro-duct	Total sold (Rs.)	Dis-tret	Ag-ent	Pro-duct	Total sold (Rs.)
1	1	1	6050	2	3	1	880	4	1	5	30
1	1	2	900	2	3	2	440	4	1	9	420
1	1	5	480	2	3	9	80	4	2	2	540
1	1	9	340	2	3	5	360	4	2	5	560
1	2	2	1200	2	4	1	750	4	2	9	3000
1	2	9	600	2	4	2	310	4	3	2	1900
1	3	1	250	2	4	5	440	4	3	1	250
1	3	5	18040	3	2	2	220	5	2	5	500
1	3	9	360	3	2	9	800	5	2	9	30
2	1	1	240	3	2	5	3400	5	3	1	750
2	1	2	450	3	4	2	7	5	3	2	520
2	1	9	85	3	4	5	1060	5	3	5	175
2	2	2	110	3	4	9	1120	5	4	2	460
2	2	5	2400	4	1	1	208	5	4	5	180
2	2	9	92	4	1	2	260	5	4	9	1440

GROUP B.

3. The following data are obtained in Textile Quality Control. The table gives 1 yeard wrapping weight in grains for three different heads and 8 deliveries, there being 4 observations for each delivery. (30)

Delivery No.	First Head				Second Head				Third Head			
	1	2	3	4	1	2	3	4	1	2	3	4
1	53	52	51	52	50	48	48	51	46	49	48	50
2	55	57	56	54	51	50	49	51	48	49	50	51
3	53	53	54	54	49	48	51	50	47	51	51	51
4	51	52	53	51	48	49	51	52	51	52	48	50
5	54	53	53	52	50	51	52	50	52	47	50	51
6	56	56	57	57	52	52	50	51	50	52	46	51
7	58	58	56	58	50	52	50	52	51	50	50	52
8	55	56	54	54	53	52	54	53	46	46	50	50

Using the above data prepare an Analysis of Variance table.

4. The following data gives the strength weight (X) and count (Y) of certain length of year. (20)

X	Y	X	Y	X	Y
92	16.7	103	20.8	116	17.5
103	16.4	86	20.4	118	17.9
90	17.2	85	16.1	102	16.4
103	16.9	78	20.8	99	17.5
107	16.9	100	18.8	122	16.1
115	15.6	88	18.9	104	16.7
110	20.8	92	20.0	120	16.1
68	15.1	102	19.2	116	16.3

Test the linearity of regression.

COMPUTER'S CERTIFICATE EXAMINATION, 1954.

PART 1B : SECTION 2.

Time : 3 hours

N.B. (a) Answers to the different groups are to be given in separate books.
(b) Attempt any two questions from group A and all questions from Group B.
(c) All questions carry equal marks.
(d) Use of calculating machines is permitted.

GROUP A.

1. (a) Find the value of $n!$ from the following approximate formula

$$n! = \sqrt{2\pi}\, n^{n+\frac{1}{2}}\, e^{-n}$$

for $n = 1, 2, 3, \ldots\ldots 10$.

(b) (i) Evaluate

$$\frac{\log \sqrt{0.27} + \log 8 - \log \sqrt{1000}}{\log 1.2} + 64(1-(1.05)^{-20})$$

(ii) Find the value of

$$88.6903\, e^{-\frac{x^2}{215.345581}} \text{ when } x = 1.2$$

2. (a) In an experiment on pea-breeding, the following frequencies of seeds were obtained : 283 round and yellow, 91 wrinkled and yellow; 97 round and green; 29 wrinkled and green; total 500. Theory predicts that the frequencies should be in the proportion of 9 : 3 : 3 : 1. Does the experimental results support the theory?

(b) The correlation coefficient between the valuation and the yield of corn per acre of farmland is found to be 0.540, with a sample size of 125. Does this indicate any real association between the valuation and the yield?

(c) The following gives some particulars about two samples of heights.

	Samples	
	I	II
Sample size	1164	1456
Mean height in inches	68.64	63.87
Variance in (inches)	7.3361	6.9832

If the differences in the mean heights indicate racial differences, do you think that the two samples were drawn from the different races.

3. The following gives the marks obtained by 514 candidates in a certain examination :

Marks obtained	No. of candidates	Marks obtained	No. of candidates
1— 5	5	36—40	79
6—10	9	41—45	50
11—15	28	46—50	37
16—20	49	51—55	21
21—25	58	56—60	6
26—30	82	61—65	3
31—35	87		

Fit a normal curve to the above frequency distribution, having given that the mean mark is 31.030 and the standard deviation is 11.560. Test the goodness of the fit. Draw the fitted curve and histogram on the graph paper.

GROUP B.

4. (a) Verify graphically if the following data conform to the equation $y = ae^{bx}$ where y denoted earning and x denotes year.

Year	1921	1922	1923	1924	1925	1926	1927	1928
Earnings	521	564	623	678	761	845	917	1003

(b) Find x and y from the following equations

$$7^{x-y} \times 3^{2x-y} = 9$$

$$3^{x-y} \div 2^{x-2y} = 3^{x}$$

[8]

5. Supply any two of the following items of information mentioning name and date of the official publications used.

(i) Reserve Bank of India figures for notes held in Banking Department, total notes issued and notes in circulation for the years 1948 to 1952.

(ii) Working class monthly cost of living index for the latest available 2 consecutive years for Calcutta, Madras and Delhi.

(iii) Total number of factory accidents in West Bengal during any 5 consecutive years, and the percentages of those of serious nature.

COMPUTER'S CERTIFICATE EXAMINATION, 1954.

PART IC : SECTION 1.

Time : 4 hours

N.B. (a) Answers to the different groups are to be given in separate books.
(b) All questions carry equal marks.
(c) Use of calculating machines is permitted.

GROUP A.

1. Scrutinize the following correlation table and copy down the same after correcting the obvious mistakes.

y \ x	1.066	1.074	1.082	1.090	1.098	1.106	1.114	1.122	1.130	Total
10	3									3
12	1	13	4							18
14		3	31	11						47
16			3	78	59					140
18				14	130	72				214
20					2	64	48	1		115
22							12	8	1	21
Total	4	16	40	103	191	136	60	9	1	558

Calculate the correlation coefficient 'r' from the correlation table.

2. Using a neat computational outlay calculate the value of

$$f(x) = 220.2e^{-0.453x} \times 1.09 \qquad \text{for}$$

$x = 0.1,\ 0.3,\ 0.6,\ 1.0,$ and $2.0.$

Find graphically the value of $f(x)$ for $x=0.5$.

Or

With the aid of appropriate statistical tables determine the value of

$$f(m) = \sum_{x=0}^{3} \left(\frac{e^{-m} m^x}{x!} \right) \qquad \text{for}$$

$m = 3.0,\ 3.1,\ 3.2,\ \ldots\ldots,\ 3.9,\ 4.0;$

and solve the equation

$$f(m) = 0.5$$

Group B.

3. Fit a cubic of the form $y = a_0+a_1x+a_2x^2+a_3x^3$ to the following data and draw the curve. Estimate the quantity of consumption for the year 1945.

Year (x)	Quantity of meat consumed (y)	Year (x)	Quantity of meat consumed (y)
1919	171	1931	160
1920	167	1932	161
1921	164	1933	166
1922	169	1934	163
1923	179	1935	147
1924	179	1936	160
1925	172	1937	157
1926	170	1938	157
1927	169	1939	165
1928	165	1940	175
1929	163	1941	179
1930	162		

Or

Given the following data :

$$n = 86, \quad \bar{y} = 3.1685, \quad \bar{x}_1 = 2.2752, \quad \bar{x}_2 = 2.1523$$

$$\Sigma(y-\bar{y})^2 = .12692 \qquad \Sigma(y-\bar{y})(x_1-\bar{x}_1) = .03030$$

$$\Sigma(y-\bar{y})(x_2-\bar{x}_2) = .04410 \qquad \Sigma(x_1-\bar{x}_1)^2 = .01875$$

$$\Sigma(x_1-\bar{x}_1)(x_2-\bar{x}_2) = .00848 \qquad \Sigma(x_2-\bar{x}_2)^2 = .2904$$

where $y = \log_{10}C$, $x_1 = \log_{10}L$, $x_2 = \log_{10}B$

(i) Estimate the constants e, a, b in the equation $\rightarrow C = a\,L^eB^b$

(ii) Test for the significance of $R_{y.x_1x_2}$ (multiple correlation of y with x_1, x_2) and $r_{yx_1.x_2}$ (partial correlation between y and x_1).

4. The following data relate to the intial wrights and the growth rates of 15 pigs classified according to pen and type of food given :

Pen	Treatment	Initial weight (w)	Growth rate in pounds per week (g)	Pen	Treatment	Initial weight (w)	Growth rate in pounds per week (g)
I	A	48	9.94	III	C	33	7.63
	B	48	10.00		A	33	9.32
	C	48	9.75		B	41	9.34
II	B	32	9.24	IV	C	50	10.37
	C	28	8.66		A	48	10.56
	A	32	9.48		B	46	9.68
				V	B	37	9.67
					A	32	8.82
					C	30	8.57

Use method of analysis of variance and covariance to test whether treatment differences are significant after eliminating the effect of initial weight.

COMPUTER'S CERTIFICATE EXAMINATION, 1954.

PART IC : SECTION 2.

Time : 4 hours

N.B. (a) Answers to the different groups are to be given in separate books.
(b) Figures in the margin indicate full marks.
(c) Use of calculating machines is permitted.

GROUP A.

1. (a) Evaluate the following determinant : (15)

$$\begin{vmatrix} 283 & 602 & 185 \\ 843 & 1511 & 538 \\ 554 & 374 & 336 \end{vmatrix}$$

Or

(b) Calculate the co-factor of each element of the following determinant :

$$\begin{vmatrix} 0.42 & 0.16 & 0.84 \\ 0.85 & 0.26 & 0.21 \\ 0.31 & 0.80 & 0.79 \end{vmatrix}$$

2. The following data represent the results of an experiment in Latin-square for six treatments. The treatments are designated by A, B, C, D, E, F and the yields of different plots are shown below the treatments : (35)

E	B	F	A	C	D
633	527	652	390	504	416
B	C	D	E	F	A
489	475	415	488	571	282
A	E	C	B	D	F
384	481	483	422	334	646
F	D	E	C	A	B
620	448	505	439	323	384
D	A	B	F	E	C
452	432	411	617	594	466
C	F	A	D	B	E
500	505	259	366	326	420

Draw the analysis of variance table and test the following :
(i) whether the effects of all treatments are equal;
(ii) whether the effects of treatments A and B are same.

Or

The following table shows the frequency distribution of statures of a sample of adult males.

Height (inches)	Frequency	Height (inches)	Frequency	Height (inches)	Frequency	Height (inches)	Frequency
57—	2	62—	169	67—	1329	72—	202
58—	4	63—	394	68—	1230	73—	79
59—	14	64—	669	69—	1063	74—	32
60—	41	65—	990	70—	846	75—	16
61—	83	66—	1223	71—	392	76—	5
						77—	2

Fit a suitable Pearsonian curve to the data and draw the fitted curve over the histogram. Also, calculate the expected frequencies in the class intervals 77—, 67— and 68—.

Group B.

3. Compile the following informations from the available Statistical Reports or Periodicals indicating the sources in each case. (17)

(i) Exports of Indian Fish, Fruits and Vegetables, Spices, Sugar, Tea and Tobacco for any three consecutive years by Sea and Air.

(ii) Hours and Miles flown, and Passengers, Freights, Mails and Newspaper carried by Indian Air line operation through Internal and International services for any five consecutive years.

(iii) Working Class Cost of Living Index (food and general) for latest four years in Bombay, Calcutta and Madras, mentioning the respective base period.

(iv) Central Government statistics of Receipts and Expenditure totals and of the Outstanding Public Debts for the years 1949, 1950 and 1951.

(v) Number of Industrial disputes of India for the latest five consecutive years.

4. Total output and unit price of certain items of industrial productions in India are given below for the years 1939, 1944 and 1949. Using 1939 as the base year, compute indices of values of production of the entire group for the years 1944 and 1949. (17)

Items of production	Unit	Total output (thousands)			Unit price (rupees)		
		1939	1944	1949	1939	1944	1949
Sulphuric Acid	Cwts.	48.9	67.0	165.8	14.50	16.22	18.75
Paints	Cwts.	55.0	95.1	51.5	129.45	134.25	139.35
Motor Spirit	Gals.	1526	2030	1224	2.52	2.60	2 75
Kerosene Oil	Gals.	2477	1495	968	1.50	1.58	1.70
Sugar	tons	57.9	90.9	87.0	470	492	508
Wheat flour	tons	50.5	45.4	34.8	875	915	985
Cement	tons	143.3	170.7	175.2	75	95	85
Salt	maunds	3533	4333	4635	3.5	4.8	5.4

5. (a) Find by a suitable interpolation formula the value of log (8.475) ! from the given table of values of x and log x (8)

x	log x
5	2.070 1812
6	2.857 3325
7	3.702 4305
8	4.605 5205
9	5.559 7630
10	6.559 7630
11	7.601 1557
12	8.680 3370

(b) Domestic demand for motor fuel in a certain town for years 1941, 1943 to 1949, in thousands of gallons, are shown in the following table. (8)

1941	885449	1946	894928
1943	889238	1947	896837
1944	891147	1948	898746
1945	893019	1949	900639

Supply the missing figure for 1942.

INDIAN STATISTICAL INSTITUTE

STATISTICAL FIELD SURVEY EXAMINATION, 1954.

PART IA : THEORETICAL

Time : 3 hours Full marks : 100

N.B. (a) Figures in the margin indicate full marks.
(b) Neatness carries three marks.
(c) Answer all questions from Group A and any three from Group B.
(d) Wherever you are asked to give information in respect of your Native State or State of domicile or District, mention the name of the State or District.

GROUP A.

1. Answer any *three* of the following :

(a) Name the divisions and the districts in each of the divisions of your Native State or State of domicile. (5)

(b) Give a general idea of any four of the following : (5)
(i) Union, (ii) Police Station, (iii) Revenue thana, (iv) Thesil, (v) Sub-division, (vi) Circle.

(c) Who is the executive head of a Sub-division ? Is there any basic difference between the functions of a District Magistrate and a District Collector ? If so, what is the difference ? (5)

(d) Name any four districts of your Native State or State of domicile, which are not adjacent to one another, together with their headquarters. (5)

2. Answer any *three* of the following :

(a) A registered book post weighing 112 tolas is to be despatched. Calculate the cost of stamps. (6)

(b) A telegram of eleven words was sent at 11 p.m. on a week day about the critical condition of a worker. Calculate the charges paid. (6)

(c) State the basic rates of 2nd class and 3rd class fares on India Government Railways. Calculate the inter class fare from Howrah to Khargpur—a distance of 72 miles. State the quantum of free luggage permissible to a 3rd class passenger. (6)

(d) What are the railways serving your Native State ? Name five of the important junction stations on these railways. (6)

3. Answer any *two* of the following :

(a) Mention the principal forest areas, hilly areas, and flooded areas of your State or State of domicile. Mention the Districts of your State having large double cropped areas. Name three principal crops grown in your State during Autumn and Rabi seasons. (8)

(b) Mention the forecasts made by your State Government on the production of Jute, Cotton, Autumn paddy and Winter paddy during the year 1953-54. How do the figures compare with the two preceeding years ? State what according to you are the reasons for changes, if any. (8)

(c) Calculate the percentages of increase or decrease in acreage and yield of Jute or Cotton or Sugarcane in your State in 1953-54 over the last three years. (8)

4. Answer any *one* of the following :

(a) Write short notes on the mining areas, esturian areas and heavy rainfall areas of your Native State or State of domicile indicating the geographical distribution of those areas. What are the principal crops in these areas ? (12)

(b) Describe crop seasons of your District. State the normal starting time, peak time and finishing time of sowing, harvesting and marketing in your District for each of the following : (i) Winter paddy, (ii) Autumn paddy, (iii) Jute, (iv) Sugarcane and (v) Mustard. (12)

Group B.

(Any *three* questions to be attempted)

5. Answer any *two* of the following :

(a) $\dfrac{5\frac{1}{2} \div \frac{4}{9}}{3\frac{1}{2} \times 1\frac{1}{2}}$ of $\dfrac{0.5-0.05+5}{1.01-0.06\times 2+0.2}$ of Rs. 8-10-8 (6)

(b) $\left(\frac{2}{3} \div \frac{4}{9} \text{ of } 7\frac{1}{2} + 999\frac{494}{495} \times 99\right)$ of 0.005 d (6)

(c) $\left(\frac{3}{8} \text{ of Rs. } 5\text{-}8\text{-}8\right) + \left(\frac{1}{7} \text{ of Rs. } 12\text{-}4\text{-}7\right) - \left(\frac{9}{16} \text{ of Rs. } 7\text{-}6\text{-}8\right)$ (6)

(d) (.4 of 3 md. 22 sr. 8 ch.) + (1.02 of 2 md. 26 sr. 4 ch.) − (2.3 of 24 sr. 6 ch.) (6)

6. (a) Express (i) 500 kilometers in miles. (12)
(ii) 450 sq. miles in acres.
(iii) 840 maunds of Jute in bales of 400 lb.

(b) Express in square inches the space which will be covered in a map of 16" = 1 mile scale by a village of size 880 acres. Show the calculation.

7. A man had a capital of Rs. 2625 and he lent out 1/3 of his capital at 6%, 2/5 of the capital at 4½% and the remaindor at 5% per annum all on simple interest. Find the total amount at the end of one year. (12)

Or

Find by practice the cost of 6 bags of coal each containing 2 cwt. 2 qr. 17lb. 8 oz. at Rs. 400/- per ton.

8. (a) Cultivation of one acre requires a pair of bullocks with a labour for 2 days. If the hire charge for the pair of bullocks is Rs. 1-12-0 per day and the labour at Rs. 2-4-0 per day, what is the cost of cultivating an area of 20 chains by 30 chains which contains a tank measuring 44 yards by 66 yards within the plot ? (6)

(b) In an examination 80% of the candidates passed in English and 85% in Mathematics, while 75% passed in both English and Mathematics. If 45 candidates failed in both the subjects, find the total number of candidates. (6)

9. The hypotenuse of a right angled triangle exceeds one side by six inches and the other side by a foot. Find the area of the triangle. (12)

10. Weekly prices were collected from a shop for four weeks. (a) Calculate the average price for each of the commodities for the period, (b) find the average price of rice (all quantities combined) in each week as well as over all weeks, (c) calculate the percentage of the price in the fourth week to that in the first week for potato and sugar. (12)

Item	week			
	1st	2nd	3rd	4t
(1)	(1)	(2)	(3)	(4)
1. Rice (fine)	22.00	22.50	21.25	21.00
2. Rice (medium)	17.25	17.87	16.75	16.25
3. Rice (coarse)	15.50	15.50	14.62	14.75
4. Flour	22.25	22.50	21.62	21.50
5. Atta	18.00	18.25	17.75	17.87
6. Musur	29.50	30.00	30.12	30.25
7. Potato	8.50	9.00	9.62	9.87
8. Sugar	31.50	32.00	32.62	33.00

Neatness . (3)

STATISTICAL FIELD SURVEY EXAMINATION, 1954.

Part IB : Theoretical

Time : 3 hours. Full marks : 100

N.B. (a) Attempt all questions
(b) Figures in the margin indicate full marks.
(c) Mention the name of Native State or State of domicile wherever you are asked to give information for your State.

1. Answer any *four* of the following :

(a) Name the consecutive States in the Indian Union which have sea coast, proceedings from the east, and give the name of the ports, if any, in each of them. (6)

(b) Name the States in order of their location which border Himalayas starting from the west. (6)

(c) Classify the important towns of your Native State or State of domicile according to their population in three groups with population 2 lacs and above, between 1 lac and 2 lacs, less than 1 lac but over 50,000. (6)

(d) What are the various routes and means of communication between four most important towns and the capital town of your State ? (6)

(e) Name the Sub-Divisional towns of your Native State or State of domicile. (6)

2. Answer any *two* of the following :

(a) Name the most important commercial crops in your Native State or State of domicile and note its total acreage, production and value at harvest time in the last three years. (12)

Explain the reasons for any serious fluctuations in their production and value.

What is the seed required per acre for those crops. Give their sowing and harvesting seasons.

(b) Draw a sketch map of Indian Union; show in it the following : (12)

(i) Your State of domicile and its capital.

(ii) Positions of capitals of Indian Union, U.P., and Bihar

or

three principal rivers.

(c) What is the main cereal crop produced in your State ? What was its acreage and production in last three years ? (12)

Mention whether its production has been sufficient to meet the needs of the State in each of these years. Show your calculations.

(d) Name the principal Rabi crops of your native district or district of domicile and give the peak month (and week) of each of the crops. (12)

3. Answer any *two* of the following :

(a) You are travelling by an express train with a railway ticket from Delhi to Calcutta. As soon as your train has reached Allahabad, you find it necessary to halt at Allahabad for a day only. Can you get the refund of the amount paid for by you for the ticket towards your Journey from Allahabad to Calcutta ? What steps will you take so that you don't loose the amount paid for by you. If you don't want to carry your personal bedding to the town, what steps will you take for the safe custody of your luggage. (6)

(b) State the relative merits and demerits of remitting money by Money Order and Insurance. (6)

(c) What is the postal charge for sending a packet of schedules weighing one maund and ten seers from Calcutta to Delhi by registered parcel. What is the extra cost for sending the same by air parcel. (6)

4. Answer any *three* of the following :

(a) Find the least integer which must be subtracted from 4230 in order to become a perfect square. (5)

(b) A sum of money deposited in a bank doubles itself in 20 years; in how many years would it triple itself ? (5)

(c) The number of spectators in a football match was 15568, the sum of six pence was charge for admission; and 1245 of the persons admitted paid an additional amount of one shilling each for grand stand ticket. The total receipts were £ 423-7-6. How many persons were spectators without payment ? (5)

(d) How many square yards will remain out of 300 yeards of matting 2 ft. 6 in. wide, after covering two floors, each of 25 ft. 6 in. by 21 ft. ? (5)

(e) Fourteen investigators were employed in a survey. They had to list the households in 350 blocks of a city for which they were paid Rs. 3/- per day and annas eight T.A. per block surveyed. Average number of block surveyed per investigator per day was 2½. Calculate the total pay bill for the survey. (5)

5. Below is given a part of a filled-in schedule for a household surveyed in the month of December, 1953, to study its employment situation. Scrutinise the entries and comment on the items which appear inconsistent or incorrect. Enter the answer in the answer book. (20)

(1) State—West Bengal
district—Dinajpur
p.s.—Bongaon
name of h.h. head—Naresh Mukerjee

(2) informant—Paresh Mukherjee
informant's relation to h.h. head—Father
mother tongue—Bengali
religion—Hinduism
caste—Kayastha
date of survey—15th November, 1953.

relation to head of h.h. members	sex male-1 female-2	age in yrs.	economic status e-earner e.d.-earning dependent n.e.d.-non earning dependent	civil condition	education standard	gainful occupation	employment status	monthly income from occupation in col. (7) Rs.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Self	1	67	e.d.	married	illiterate	watchman	employer	60
2. Son	1	43	e.	,,	matriculate	clerk	employee	40
3. Wife of Sr. 2	2	45	n.e.d.	,,	middle	own domestic work.	,,	nil
4. Daughter of Sr. No. 1	2	39	e.	unmarried	primary	teacher in Intermediate college.	employer	75
5. Son of Sr. 2	2	39	e.d.	widowed	B.A.	Studying	nil	nil
6. Daughter of Sr. 4.	2	13	n.e.d.	unmarried	illiterate	student	nil	nil
7. Daughter of Sr. 2.	2	18	n.e.d.	married	matric	own household tailoring work	nil	20
8. Servant	2	30	n.e.d.	married	literate	domestic work	employee	25

Neatness (5)

STATISTICAL FIELD SURVEY EXAMINATION, 1954.

Part IC : Theoretical

Time : 3 hours Full marks : 100

N.B. (a) Figures in the margin indicate full marks.
(b) Wherever you are asked to give information for your State, mention the name of the State.

1. Attempt any *two* of the following :

(a) Select any six of the following rivers and mention the names of the countries through which they flow. Mention the ocean or sea into which these selected rivers merge. Arrange these selected rivers in order of their lengths. (5)

(i) Yenisei, (ii) Brahmaputra, (iii) Hoangho, (iv) Nile, (v) Danube,
(vi) Yangtse-kiang, (vii) Niger, (viii) Amazon, (ix) Indus.

(b) Name the countries you have to pass through in a journey by land from Quetta to London via Turkey. (5)

(c) Name the countries surrounding any one of the following and state the names of their capital. What are the most important ports of these countries? (5)

(i) Iraq, (ii) Itay, (iii) Thailand, (iv) Pakistan.

2. Attempt any *two* of the following :

(a) What is the total number of milk cows and breeding bulls of your State according to the last census report. (5)

(b) What is the population belonging to minority community in your State ? Arrange the districts of your State in ascending order of concentration of Minority Community. (5)

(c) In which of the previous three years, yield of the principal food crop of your State was the highest ? Name the principal foodcrop and give the yield rate per acre for the last 3 years. (5)

3. Attempt any *one* of the following :

(a) State briefly the designations and functions of the principal officials, in charge of the following departments in the Districts of your State. (6)

(i) Agricultural department, (ii) Revenue Administration, (iii) Irrigation, (iv) Civil justice, (v) General Administration, (vi) Police.

(b) What are the sources from which you can obtain the following "basic materials" from any district in your State. (6)

(i) cadastral maps, (ii) list of families in any village, (iii) prevalent rates of wages for labourers, (iv) list of plots in villages and classifications thereof, (v) prevalent rates of rent.

4. Answer all of the following :

(a) What are the principal sources of water supply in your *State* for agricultural purposes ? What are the principal implements used for irrigation? What are sechan and melan ? (6)

(b) What are the agricultural implements used in the cultivation of the principal crop (name the crop) of your State ? What are the operations performed by each of these implements ? What are the *improved* agricultural implements in use in your State ? (6)

(c) Name the Districts with highest and lowest rainfall in your State. Has the difference in rainfall made any difference in the nature of cropping in these districts. If so, describe. (6)

5. Attempt any *two* of the following :

(a) What avenues of employment are open to landless labourers in rural areas of your State ? Give an estimate of idle time (in terms of months) for want of employment and suggest measures for utilisation of this idle time. (7)

(b) What are the rates and terms of share cropping in your State and which are the crops generally cultivated under this system. What are the other systems of non-occupancy tenancy in vaugo in your State and which crops are generally cultivated under these systems. (7)

(c) Give the principal items of expenditure ordinarily incurred by (i) an agricultural family, (ii) a weaver's family in your State. (7)

(d) What are the areas in your State *from which* labourers emigrate for other places ? State the type of agricultural work for which they generally seek employment. What are the places *to which* they emigrate for employment ? Is there a regular cycle of their movement from and to their normal place of stay ? (7)

6. Briefly outline the stages involved in carrying out a random sample survey. Explain the principles of random sample survey bringing out the importance of methodology in different stages of work, sources of bias and their elimination. (14)

7. Answer any *one* of the following :

(a) It is proposed to carry out a survey into the nature and extent of unemployment in urban and rural areas of a State where total number of households in urban area = 2400 and total number of village = 3500 and total number of households in rural area = 2,80,000. The survey is to be carried out in two phases and completed in 3 months. In the first phase, 20 per cent of the villages in rural areas are to be investigated. (Each sampled village is to be completely investigated. In the second phase, five per cent of the households investigated in the first phase in urban areas and 10 per cent of the households so investigated in the villages are to be taken up for detailed investigation. Assuming that fifty households in the first phase and six households in the second phase on an average (inclusive of journey time) can be investigated by one primary worker per day. Give an estimate of staff and total salary expenses for carrying out field work with adequate supervision. Show your calculations. (24)

(b) Calculate the number of primary and supervisory field staff and an estimate of total cost (salary and non-salary) for a simple economic survey in three adjoining districts round the headquarters of your State. The object of the survey is to estimate the extent of rural indebtedness of weavers' households and the production of all types of handloom cloths during a period of one year preceeding the date of survey. The households to be selected are chosen in two stages, random villages being selected in the first stage. You may assume the following : (24)

(i) That the enquiry will be restricted to 200 households in each District spread in 10 villages.

(ii) Schedules from two households can be filled up by one primary worker in each working day.

(iii) The survey is to commence on 1st August, 1954 and has to be completed by 15th September, 1954.

(iv) The rate of pay and allowance excluding T.A. for each investigator is fixed at Rs. 100/- per month.

(v) The rates of pay and allowances excluding T.A. for each inspector is fixed at Rs. 150/- per month.

(vi) Other charges (i.e., T.A. and contingencies) of all kind may be estimated in the above background.

(vii) One Investigator will work within a suitable compact area.

Neatness (4)

STATISTICAL FIELD SURVEY EXAMINATION, 1954.

PART 2A : THEORETICAL

Time : 3 hours Full marks : 100

N.B. Figures in the margin indicate full marks.

1. Answer any *two* of the following :

(a) Define the terms "complete enumeration" and "sample surveys". Discuss their merits and demerits under different conditions. (15)

(b) In collecting data regarding items of domestic consumption three alternative periods of reference have been suggested. (15)

(i) one week preceeding the date of enquiry;

(ii) one month preceeding the date of enquiry;

(iii) one year preceeding the month of enquiry.

Discuss the merits and demerits of the three alternatives and mention the situation under which these three alternatives can be adopted.

(c) Discuss the merits and demerits of the following method of data collection. (15)

(i) Mailing questionnaires,

(ii) Interview method.

(iii) Accounting method.

2. Prepare in a square paper supplied, a form (schedule) indicating the items of information you would collect in an investigation to ascertain, by interview method. (20)

Either

(a) land owned; land cultivated; crops grown in different seasons; areas cultivated more than once; inventory of livestock and inventory of implements. Provide columns for calculating net area sown and indicate how.

Or

(b) cattle possessed; rate of production of cows milk and buffaloes' milk; period of production of cows milk and buffaloes' milk; poultry possessed; rate of production of eggs; utilisation of milk and eggs by the families to be surveyed. Indicate the reference period and unit of time for which production rates should be collected, with reasons.

3. Answer any *one* of the following :

(a) A family budget survey is to be conducted in Calcutta over a full year with survey month as reference period covering a sample of 2400 families. (20)

Calculate the time and cost for the above survey showing details of calculations.

(b) The following table shows figures of rainfall in 'inches' in a given time period 'p' in year 1 and year 2 and the deviation of rainfall in year 2 from normal. Present in a suitable form the normal for each region and the deviation from normal

each year. Regions 1 to 5 and 6 to 10 are two tracts, give the average rainfall and normal rainfall for each tract. Give your comments on the result. (20)

region number	rainfall in inches during time period 'p'		deviation of year 2 from normal
	year 1	year 2	
(0)	(1)	(2)	(3)
1	13.3	14.4	(−) 0.2
2	16.0	15.1	(−) 3.4
3	10.2	11.3	(+) 1.3
4	12.1	14.2	(+) 1.5
5	9.9	12.1	(−) 0.1
6	13.5	11.6	(−) 2.5
7	3.0	17.1	(+) 11.7
8	13.1	11.0	(+) 1.2
9	2.4	3.8	(+) 0.1
10	5.0	4.5	(−) 1.6

4. Answer any *three* of the following :

(a) How will you proceed to find out the actual age of an old and uneducated villager who when asked about his age puts it between 20 and 40 years ? (5)

(b) Suppose a sample survey of the cottage industries is being carried out. 1% samples have been selected for the purpose. Being afraid of taxation a group of owners of cottage industries refuse to supply any information. State how you would proceed to convince them that there is no intention of any taxation. (5)

(c) Should a servant who dines with a family but sleeps outside be considered to be a member of the family during a family budget enquiry ? Give your arguments to support your answer. (5)

(d) In inspecting work of investigators engaged in land utilisation survey by observation of random clusters of plots, you find that a plot X is in ploughed condition and without any crop through it has been recorded by the Investigator as being 16 annas under a crop grown in the season which is ending. State how you will decide whether the entry made by the Investigator was correct or incorrect. (5)

5. You have arrived at a camp for inspection of family survey work which is being done by 4 Investigators from that camp in four nearby villages. You have to leave that camp for the next camp after 1½ days. Describe in detail the stages of your inspection work in this camp mentioning from what considerations you would select the Investigator or Investigators and particular families for purposes of local check and verification. (10)

Neatness (5)

STATISTICAL FIELD SURVEY EXAMINATION, 1954.

PART 2B : THEORETICAL.

Time : 3 hours Full marks : 100

N.B. Figures in the margin indicate full marks.

1. Answer any *two* of the following :

(a) In a sample survey, you were in charge of the field operations. You are now asked to prepare a report on the field survey, bringing out all the relevant points. Mention the points, which you will discuss in the proposed report and arrange them in the manner you think appropriate. (12)

(b) State the number of forecasts that are generally published in respect of the following crops in your State ? Mention in what breakdowns—i.e., Police Station, tehsil, district or state—the data are available and also mention the items of information that are published in different forecasts. (12)

(a) wheat
(b) winter rice
(c) jute
(d) sugarcane.

(c) Sometimes it is urged that primary Investigating staff do not go to actual sample villages for field survey due to difficult accessibility but work up figures from a convenient place. (12)

Explain how would you detect these cases of frauds and prepare a scheme which, if followed, would prevent such occurrences.

2. Write short notes on any *six* of the following :

(a) Cadastral Survey (4)
(b) Determination of area under crops for the State : (i) by sample survey and (ii) according to village papers : which method do you prefer and why ? (4)
(c) Major cereals and cash crops in your State : What are their operating seasons ? (4)
(d) Industrial status and Economic status. (4)
(e) Net area sown (4)
(f) Harvest price (4)
(g) Foreign merchandise (4)
(h) Random sample. (4)

3. Answer any *two* of the following :

(a) Statistical data relating to the following are required. (i) Name the publications which should be consulted for the required information and (ii) state the periodicity of publication, (iii) comment on the method of compilation, reliability and coverage of these published figures. (16)

(i) Acreages and production of cotton in different States of India.
(ii) Quantity and value of raw cotton and yarn imported to and imported from India.
(iii) Inland trade of raw cotton by trade blocks.
(iv) Number of Cotton mills in different States of India.
(v) Index number of wholesale prices in India.

(vi) Working class cost of living Index number of important industrial towns of India.

(b) Being in charge of an ad hoc field survey with a temporary staff you have to wind up the organisation within a specified date. State the actions you would have to take, and the points you will have to look after for this purpose mentioning approximately the successive stages in which the different actions should be initiated or taken. (16)

(c) A staff consisting of some Chief Inspectors (pay Rs. 200–300 p.m.), Inspectors (pay Rs. 125–200 p.m.,) Investigators (pay Rs. 75–125 p.m) and peons of C.I.'s and Inspectors (Rs. 20–30 p.m.) is employed for a sample survey in a region comprising of 3 districts each in charge of a Chief Inspector. The sample villages where work has to be done have been randomly selected. The average jurisdiction of an Investigator is about 150 sq. miles, that of an Inspector about 600 sq. miles; and that of a Chief Inspector about 2400 sq. miles. Transport facilities are as is usually available in your State. On the above basis, state with reasons what you would consider would be a fair set of rules for travelling allowance to the different classes of staff mentioned for their ordinary tours from Headquarter to place of joining, for attending in Inspector's and Chief Inspector's offices and at Head quarters, and towns of survey and inspections having regard to the fact that the cost will have to be kept as low as feasible without affecting the efficiency of survey or inspection work and without making any class of worker suffer any loss for their tours. (16)

4. State briefly the action you propose to take in any four of the following cases: (16)

(a) A field worker has reported that while he was waiting for a train in a railway station, maps and schedules which he was carrying with him were stolen along with his personal luggages. One of the stolen maps was a 'Restricted copy'—i.e., the map was marked as 'Restricted' by the issuing authority.

(b) An investigator has informed that certain samples have fallen in the Indo-Pak border villages. According to local information, those villages are not safe for investigation work by outsiders.

(c) During inspection, you have detected that a field worker has filled up a number of crop-cutting records without performing the actual cuts. On being asked by you to explain the reasons thereof, he has admitted his fault and sought your mercy.

(d) A field inspector has reported that local people are very hostile towards the survey workers. People of the locality have decided not to give any information to the workers.

(e) You are a Govt. officer and are placed in charge of a district office. On a pay day, due to bad weather condition, all your staff could not come, to take their payments. A large sum of money is, therefore, left undisbursed. You are responsible for safe custody of the undisbursed amount. Indicate the possible alternatives.

(f) A field investigator is required to tour at least 20 days in a month in a certain area to justify his claim for fixed T.A. for the full month. During a particular month, he had to visit head office on official business, but he did his normal touring for 20 days as prescribed. He has now submitted a bill for fixed T.A. for the month and also a T.A. bill for journeys to head office.

Neatness (4)

STATISTICAL FIELD SURVEY EXAMINATION, 1954.

PART IA : PRACTICAL

Full marks : 100

N.B. Necessary instructions will be given by the Officer-in-charge of the examinations.

GROUP A.

1. Draw symbols which are shown in C.S. and P.S. maps to represent the following :

(a) in C.S. maps (any *six* to be tried) (6)
(i) buildings, (ii) pucca well, (iii) kancha well, (iv) tri-junction pillar, (v) pond with banks, (vi) burial ground, (vii) railway line, (viii) river with current, (ix) marsh-land, (x) hill, (xi) forest.

(b) in P.S. maps : (4)
(i) police station, (ii) district or sub-divisional headquarters, (iii) municipal boundary, (iv) market day in a mouza (village).

2. What are the usual scales which are adopted in your State for the preparation of the following maps : (6)
(i) C.S. map, (ii) P.S. map, (iii) District map.

3. (a) Ascertain plot numbers for three fields on the cadastral map shown to you on the ground. (9)

(b) Locate on the ground five plots shown to you in a cadastral survey map. (15)

GROUP B.

(Any *two* of the following to be attempted)

4. Fill up form No. IA-1 supplied, from two rural households out of the following list which cultivated at least three acres of agricultural land. (25)

Serial No.	address of household.
1	
2	
3	

5. With the help of cadastral survey map identify ten plots, survey numbers of which will be given to you; and fill up the anna proportions of the crops and other uses as the case may be in form No. IA-2. (25)

6. Collect the retail prices of the commodities shown in form IA-3 from a given market and record them in the space provided. (25)

Oral (10)

FORM LA-1

District ..... Name of the Union.....

P.S. ..... Address of Union Board.....

Village ..... J.L. No..... Union rate assessed to the household.....

Name of head of household.....Age.....

Father's name.....

Occupation of the head of household.....

†Household size..... Male..... Female.....

Agricultural lands (in acres) possessed by the household.....

Date of survey.....

sl. no.	Items	As on the date of survey			Total		*During the year							
		no. in the age group			no.	value in (Rs.)	purchased		sold		born		dead	
		below 1 year	1-5 years	over 5 years			no.	value in (Rs.)	no.	value in (Rs.)	no.	value in (Rs.)	no.	value in (Rs.)
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Cow													
2	Bullock													
3	Bull													
4	She-buffalo													
5	He-buffalo													
6	Ram													
7	Ewe													
8	She-goat													
9	He-goat													
10	Donkey													
11	Mule													
12	Ducks													
13	Hens													
	Total													

* Year means 12 months preceeding the date of enquiry.

†Household size means total no. of persons taking meal from the common kitchen for at least 16 days during 30 days preceeding the date of enquiry.

Hours of receipt of the paper.....

Hours of submission of the paper.....

Total time spent (hrs.) (a) Journey..... (b) Survey.....

(c) for other reasons, if any..... (d) Total.....

Signature of the candidate.....

Roll No..... Date.....

FORM NO. 1A:2.

State.....District.....P.S.....

Name of Village or Mouza.....Mouza No. (if any).....

Serial No.	Plot No.	Annas under									
		Jute	Paddy	Pulses	Oil seeds	Vegetables	Orchards	Homestead	Other crops	No crops	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

Name of the Investigator..... Date of Survey.....

Signature of the Investigator.....

Time of starting..... Time of returning..... Total time taken.....

Note: Timings should be recorded in the presence of the Examiner.

FORM No. IA-3.

State..... District..... Town.....

Name of the market.....

Serial No.	Name of articles	Unit (describe)	Price per Unit Rs. as.	Remarks
(1)	(2)	(3)	(4)	(5)
1	Rice (fine)			
2	Rice (medium)			
3	Wheat			
4	Arhar			
5	Moong			
6	Musur			
7	Ghee			
8	Dalda Vanaspati			
9	Butter			
10	Mustard Oil			
11	Coconut Oil			
12	Cow milk			
13	Egg (hen)			
14	Mutton (goat meat)			
15	Potato			
16	Onion			
17	Sugar			
18	Gur (cane)			
19	Salt			
20	Dry chillies			
21	Turmeric (powder)			
22	Tea			
23	Coke (coal)			
24	Firewood			
25	Charcoal			
26	Kerosene oil			
27	Matches			
28	Bidi			
29	Cigarettes			
30	Washing soap			

Name of the Investigator..... Date of Survey.....

Signature of the Investigator.....

Time of starting..... Time of returning..... Total time taken.....

Note : Timings should be recorded in the presence of the Examiner.

STATISTICAL FIELD SURVEY EXAMINATION, 1954.

PART IB : PRACTICAL.

Full marks : 100

N.B. Figures in the margin indicate full marks.

1. Extract the area of five plots indicated on the mouza map supplied to you. (Use of flat ruler is allowed but not acre comb). (10)

2. (a) Four objects, A, B, C, D, are shown to you. Estimate the distances from (i) A to B, (ii) B to C, and (iii) C to D by eye inspection. (9)

(b) Estimate the area of three plots shown to you, by *eye inspection* and not by any measurement. (6)

(c) Estimate the weight of three articles or bundles shown to you. (Weighing is not allowed, but lifting by hand to estimate weight is allowed). (9)

(d) On the sketch map supplied, a large plot has been shown in three blocks, A, B and C. Estimate the proportion of area (in annas) of each block taking full plot as 16 annas. (6)

(e) From a 32" = 1 mile scale map provided, identify 3 plots on the ground whose survey numbers are given to you. (12)

3. Collect and fill in the information required in form I-B from one of the following households having not less than three members.

Ser. No.	Address
(1)	
(2)	
(3)	

Mark allocation : Block I (2)
II (4)
III (4)
IV (12)
V (18)

4. Viva voce on form filling (8)

Form I-B.

(1) identification of household

1. State..... 4. Sub-Div./Tehsil .....
2. town/city/village ..... 5. hamlet .....
3. head of household ..... 6. address.....

(2) classificatory characters		(3) other particulars of household.	
		item	code
1. household size.....		1. Refugee household (yes-1; no-2)	.....
2. expenditure (Rs.)..... (last calendar month)		2. migrated from (east pak-1; west-pak-2; others-3)	.....
land possessed in acres :			
(i) owned.....		3. name of place intending to settle	.....
(ii) leased in.....		4. religion	.....
4. principal occupation of household.....		5. caste	.....
		6. mother tongue	.....

(4) demography and occupation of household members

sr. no.	relation to head	sex (m-1; f-2)	age last birth day (yrs.)	(married-1; un-married-2; widowed-3; divorced-4; separated-5)	literate-1, illiterate-2	during last calendar month specify).....			
						principal occupation		subsidiary occupation	
						description	income (Rs.)	description	income (Rs.)
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	head								
2									
3									
4									
5									
6									
7									
8									
9									
10									

(5) consumption of cereals during the last 30 days preceeding the date of enquiry; date.....

1	Paddy (unhusked)
2	Rice (husked)
3	Chira
4	Muri
5	Khoi
6	Other rice products
7	Sub-total (1-6)
8	Wheat
9	Atta
10	Maida
11	Suji
12	Barley
13	Barley atta
14	Other cereals and products
15	Sub-total (8-14)
16	Grand Total

1. Name of Investigator.....
2. Date..... 3. Signature.....
4. Time of receiving the schedule.....
5. Time of returning the schedule.....

STATISTICAL FIELD SURVEY EXAMINATION, 1954.

PART IC : PRACTICAL.

1. Answer any *one* of the following :

Read carefully the note in Appendix I which describes facts and information which have been collected by interview method in a survey.

(a) Fill up the forms IC-1 (pages 1 to 3) appended to the note on the basis of the above facts and information.

Marks : block I 2 block III 14

(total = 40) „ II 6 „ IV 18

(b) Underline in the note in Appendix I any which you think is seriously wrong. Give a serial number (i), (ii), (iii) etc., to each such portion on the margin of the note and explain in a separate sheet of paper attached to the form, why you consider each of these to be seriously wrong. (10)

(c) Viva Voce on above. (8)

Neatness (4)

Or

Question 2 on page 6.

APPENDIX I.

Collected information to fill up the Schedule IC-1.

An economic investigation was conducted in the village Faridpur of Nadia district. It is one of the important villages of Matiari Union of police station Kaliganj. It is a big village having 260 households having an expenditure level varying from Rs. 500/- to Rs. 30/- per month. Information of only one household is shown below.

The illiterate informant Sri Rash Behari Das was a farmer for the last twenty years on 15th July 1954 the date of enquiry. He was to complete his fifty years of age just after six months. He was found anxious to get his elder daughter married soon. He was also engotiating for the marriage of his eldest son after the death of his wife ten months ago. The wife of the informant died at the age of 36 due to septic fever after giving birth to a male child who survived the mother six months only. The child suffered for eight days from dysentry. Twenty rupees were spent on medicine and injection. The doctor visited the house every day and ten rupees were paid to him as visits during those eight days. The husband was very sorry that he could not manage to have the medical treatment in time nor he could send her to the hospital for proper care and nursing. He further informed that generally there was no disease in the household. After the death of the mother children were suffering

from stomach troubles and malaria. The youngest son had an attack of dysentry for a week and both the daughters had malaria. The elder one suffered for two weeks and the other for ten days. All of them got normal diet only a week before the date of enquiry.

He further mentioned that his wife was quite happy as all her children were alive at the time of her death. The informant had three sons and two daughters on the date of enquiry. The eldest son was serving a commercial firm as a typist on Rs. 100/- for the last one year though he was a temporary hand there. His next brother aged eighteen was reading in a college. He was younger than the oldest one by two years but both matriculated in the same year. The youngest brother should have appeared in the school final in the coming year but he left the school two years ago when he was only thirteen. Daughters could get some coaching from the brothers as there was no school for girls near about. The father was anxious to get his daughter married though she would complete her twelfth years only a month later. Next daughter was younger than the other by two years and a half.

The informant was unwilling to wait further to answer the queries as he had other engagements. Another appointment was made to obtain further information from him. He related in the next visit that he was consuming rice prepared from home grown paddy at the rate of two seers and a half per day. Atta and maida were also consumed to prepare bread etc., occasionally. It was not possible for him to give the quantity of atta and maida separately. On further probing it was found that seven chataeks were consumed per week for both the commodities and the proportion might be three to one for atta and maida respectively. Moong and Musur are the pulses used in the household. On average two seers and a half of each variety were consumed per month of 30 days. Three and a half seers of potato and an equal amount of green vegetables were also used in a fortnight but leafy vegetables about eight seers of which were usually collected from the garden, were the consumption during the same period. The price of rice, atta and maida according to the market rate was Rs. 17/8/- per md., moong Rs. 35/- per md., musur Rs. 27/8/- per md., potato Rs. 15/- per md. and price of green vegetables on average was Rs. 12/8/- per md. Leafy vegetables were not usually sold in the market. The price, on the average, was anna one and pies six only per seer when it was actually available.

When he was asked to give his expenses on other items he supplied the following data. He got himself shaved by a barber once a week for one anna but his eldest son used to shave twice a week. He did not like to shave himself. The children consumed three pieces of toilet soap a month. Price of one such piece was as. -/8/-. One bottle of scented hair oil was used by them in a month costing Rs. 1/12/-. Washerman used to serve them regularly. About eighty pieces of clothes were washed per month for Rs. 8/-. On average three tickets for a cinema show was bought every week for as. -/10/- per ticket. A weekly paper is regularly purchased for as. -/2/6. The second son bought some text books for Rs. 30/- and paid Rs. 24/- as tuition fees for two months in advance. The transactions were made two months ago. The family physician visited the house three times during the last illness of the children. Mixture and tablets had to be brought from a pharmacy. The price of Rs. 5/12/- was left unpaid till the date of enquiry. Rs. 8/- was however paid in cash to the doctor as visit. The informant later expressed his willingness to be dragged into more queries as he did not remember other expenses.

FORM IC-1

Block I,

District..... Police Station..... Mouza (village).....

J.L. No..... Sheet No..... Union..... Street.....

Name of head of household..... Date of enquiry.....

Address of Household.....

Block II. Demographic particulars of persons of the household.

serial no.	relation to head (write exact relation as borther's son, father's brother's daughter etc.)	sex male–1 female–2	age in completed years	literacy literate–1 illiterate–2	present on day of investigation present–1 absent–2	marital status single–1 married–2 widowed–3 divorced–4 separated–5	economic status earner–1 earning dependent–2 non-earning dependent–3	duration of present economic status in years	principal means of livelihood
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

FORM IC-1 *(continued)*

Block III. Births, marriages and deaths during 3 years ending on 15th July, 1954, and sickness during month ending 15th July, 1954.

Births										Deaths					Sickness during mont ending 15th July 1954					
				at birth of child																
Serial no. of birtus.	still born—1, alive dead—2, now alive—3.	age of child in months A	sex : M-1, F-2.	age of mother B	duration since marriage (yrs.) D	Interval since previous birth C.	age of father B	no. of previous issues E	where birth took place H	serial no. of death	age at death B.	sex : M-1, F-2.	cause of death I	where death took place H	serial no. of sickness	age at sickness B.	sex : M-1, F-2.	cause of sickness I.	duration of sickness in days.	sickness still continuing (yes/no).

A—If alive in number of completed months, if dead number of completed months of life at death.
B—in completed years.
C—in completed years from the date of marriage for the first issue, others from the previous issue.
E—Total number of previous issues to the mother (irrespective of the child being alive or dead).
H—in hospital—1, in household—2, other places—3.
I—Malaria—1, typhoid—2, other fevers—3, complication of child birth—4, cholera—5, dysentry—6, other bowel complaints—7, other diseases—8.

FORM IC-1 (*continued*)

BLOCK IV. Expenditure on some food and other miscellaneous items for the last 30 days ending on 15-7-54.
(Amounts to be expressed in decimal notation of rupees e.g., Rs. 1/8/- should be noted as "01.50").

serial no.	items	expenditure including imputed value (Rs. 00.00)
	(1) Food	
1	Rice	
2	Atta	
3	Maida	
4	Other wheat products	
5	Moong	
6	Musur	
7	Potato	
8	Green vegetables	
9	Leafy vegetables	
10	Others	
	Food Sub-total	
	(2) Education	
1	Books	
2	Newspapers	
3	Periodicals	
4	Tuition fees	
5	Others	
	Education Sub-total	
	(3) Medicine etc.	
1	Medicine--Allopathic	
2	,, Homeo	
3	,, Others	
4	Others	
	Medicine Sub-total	
	(4) Toilets	
1	Toilet soap	
2	Cosmetics	
3	Hair oil	
4	Comb	
5	Shaving requisites	
9	Others	
	Toilets Sub-total	
	(5) Amusements	
1	Cinema	
2	Theatre	
3	Toys	
4	Others	
	Amusements Sub-total	
	(6) Services	
1	Barber	
2	Dhobi	
3	Tailor	
4	Teacher	
5	Priest	
6	Medical man	
7	Cobbler	
8	Servant	
9	Cook	
10	Carpenter	
11	Others	
	Services Sub-total	

Part IC : Practical.

Group C (*continued*)

The three industrial households whose names and addresses are noted below are engaged in the respective industries noted against each.

(i)

(ii)

(iii)

(a) Fill up the form marked IC in respect of any one of the parties according to your choice.

Marks allotment : Section A 2; Section B 0;
(40 marks) Section C 14; Section D 18

(b) State in the blank sheet attached to the form why you have chosen the particular party in preference to others. (2)

(c) Of the Information collected by you, state by referring to sections, blocks, columns and items (e.g., item..... of col..... of block..... of section.....) you consider as likely to be seriously inaccurate. Give reasons. State briefly why it was not possible to collect more accurate data. (8)

(d) Viva Voce on above. (6)

Neatness, (3)

FORM IC-2

Section A(1)—*Details of the sample.*

Name of the Industry (in block letters).....

District..... P.S..... Union/Ward No.....

Village/Town..... Street/Road..... House/Holding/J.L. No..... Post Office.....

Note : Strike out the portions not required.

Section A(2)—No. of days the industry was opened during 3 months ended on 10-6-54.....

Section B—Details of labour employed during 3 months ended on 10-6-54.

workers		no. of hours worked			average no. of persons employed per day			salaries, wages, bonus and other cash benefits paid to.....			total no. of hours lost due to leave etc. (only) in the case of full time workers
		full time	part time	total of (1) and (2)	full time	part time	total of (4) and (5)	ful ltime workers (Rs.)	part time workers (Rs.)	total of (7) and (8) (Rs.)	
(0)		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Men											
Women											
Children (up to 11 years of age)	Male										
	Female										
	Total										

FORM IC-2 (*continued*)

SECTION C.—Fuel, Lubricants, Raw materials etc., actually consumed during 3 months ended on 10-6-1954.

items consumed	unit	quantity	purchase value (Rs.)
(1)	(2)	(3)	(4)
I. Fuels :			
1. Coal	Maund		
2. Coke	Maund		
3. Charcoal	Maund		
4. Firewood	Maund		
5. Fuel oils	Gallon		
6. Other fuels (value only)	—	—	
II. Electricity	Unit (kwh)		
III. Lubricating Materials :			
1. Lubricating oils	Gallon		
2. Other lubricants (value only)	—	—	
IV. Raw materials :			
(a) Raw materials			
(i)			
(ii)			
(iii)			
(iv) Others (value only)	—	—	
(b) Auxiliary materials			
(i)			
(ii)			
(iii) Others (value only)	—	—	
V. Packing Materials (value only)	—	—	
		Total :	

Note :—

(a) If the quantities consumed during 3 months ended on 10-6-54 are not directly available, it should be noted that the quantities should cover the actual purchases of each item effected during the period of the survey *plus* stocks at the beginning of the survey *less* stocks at the end. Transport charges should be included in the purchase value.

(b) The names of three important items of basic materials and two important items of auxiliary materials should be furnished in the spaces provided under (i), (ii) and (iii) of item no. IV(a) and under (i) and (ii) of item no. IV (b).

(c) Standard units for the raw materials consumed should be mentioned in every case as far as possible.

(d) If there is no entry in any col. the word "Nil" should be written.

FORM 1C-2 *(continued)*

SECTION D.—Production during 3 months ended on 10-6-54.

name of products and by-products	unit	production		sale	
		quantity	value (Rs.)	quantity	value (Rs.)
(1)	(2)	(3)	(4)	(5)	(6)
I. Finished Products :					
(a)					
(b)					
(c)					
(d)					
(e)					
(f)					
II. By Products :					
(a)					
(b)					
(c)					
(d)					
Total	—	—		—	
III. Amount received for work done for others on materials supplied by them.	—	—		—	
Total	—	—		—	

Notes :—

(a) Standard units for the finished and by-products should be mentioned in every case.

(b) Quantity of each item of products and by-products made during the period of the survey irrespective of whether sold out or held in stock for sale during subsequent period should be furnished in col. (3) and to ex-factory net selling value in col. (4).

(c) Particulars under "sale" in cols. (5) and (6) should relate to the products actually sold during the period of survey.

(d) If there is no entry in any col. the word "Nil" should be written.

STATISTICAL FIELD SURVEY EXAMINATION, 1954.

PART 2A : PRACTICAL.

Full marks : 100

N.B. Figures in the margin indicate full marks.

GROUP A.

1. Two schedules, Nos. IIA-1 and IIA-2 are attached here to. Choose any one of them and fill it up for one family out of the three described below.

Serial No.	Address of the family	(Marks for filling up different blocks are shown in the form: total marks for the whole form being 50).
1		
2		
3		

GROUP B.

2. Assuming that the schedule you have been asked to fill up is intended for a family budget survey, answer any *two* of the following only, *with reference to the form which you have chosen for filling up.*

(a) Whether any and if so, which item or items of information should have been included in the schedule but has or have not been included. (12)

(b) Whether any and if so, which columns or blocks or items are unnecessary for purposes of the survey. (12)

(c) Give details of any other defects which you find in the form other than those mentioned in items (a) and (b). (12)

3. In filling up the schedule chosen by you state—

(a) How you have assured yourself that information about use of liquor or intoxicants or expenditure on other secret heads have not been suppressed. (8)

Or

If you have filled up any block relating to income, how you have satisfied yourself that any part of the household income has not been suppressed ?

(b) State the definition that you have adopted or would adopt for any four of the following : (16)

(i) Household; (ii) economic status, (iii) gainfull and non-gainful occupation; (iv) principal and subsidiary occupation (v) sickness; (vi) illiterate and literate ; (vii) not in labour force ; (viii) permanent and temporary employment; and (ix) borders and lodgers.

Give illustrative short notes to clarify the concepts.

Neatness (2)

FORM IIA-I.

Household Survey, 1954.

BLOCK I. Identity of the sample. (3 marks)

1. District..... 2. P.S..... 3. Town.....
4. Street..... 5. House No.....
6. Name of household head..... 7. Name of informant.....
7. Informant's relation to head.....

BLOCK II. Composition and other summary information of the household. (5 marks)

1. household size : adult male..... male..... Child : adult female..... female.....
2. no. of earners....., earning dependents....., non-earning dependents.....
3. no. of persons : unmarried....., married....., widowed....., divorced or separated.....
4. no. of persons : illiterate....., merely literate....., educated.....
5. no. of persons with technical or professional qualification....., merely practical skill....., certificate, diploma or degree.....
6. no. of persons : gainfully occupied....., unemployed seeking employment....., not in the labour force.....
7. h. h. income last month Rs..... 8. h. h. expenditure last month. Rs.....
9. religion..... 10. mother tongue.....

FORM HA-1 (*continued*)

Block III. health condition of household members during last month

sr. no.	name of person	relation with head	age last birth day in years	sex	marital status	sickness			expenses incurred Rs.....	
						name	cause	duration in days	consulta-tion	medicine & sick diet
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

Block IV : employment position of the household members on date of survey :

sr. no. in bl. III	economic status	principal gainful occupation							subsidiary gainful occupation		unemployed persons	
		industrial status	duration of this occupation in months	description	income last month Rs.	no. of days worked	no. of days earned	over hrs. worked per day	description	income last month Rs.	industrial status	duration of this status in months
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)

FORM IIA-1 (*continued*)

BLOCK V (a). Informants preference : put a circle round the appropriate letter or figure.

	H=habitual C=casual	order of preference				H=habitual C=casual	Order of preference				H=habitual C=casual	order of preference		
dice	H C	1	2	3	football seeing	H C	1	2	3	Biri	H C	1	2	3
cards	H C	1	2	3	cinema	H C	1	2	3	Hukka	H C	1	2	3
chess	H C	1	2	3	gramophone	H C	1	2	3	cigarette	H C	1	2	3
football playing	H C	1	2	3	radio	H C	1	2	3	tobacco (chewing)	H C	1	2	3

BLOCK V (b).

	order of preference	give reasons for preference of particular treatment	do you believe in ?		
allopathic	1 2 3		palmistry	yes	no
homeopathic	1 2 3		horoscope reading	yes	no
ayurbedic	1 2 3		forehead reading	yes	no
unani	1 2 3				
other describe	1 2 3				

BLOCK VI. Some details of household members excluding illiterates.

sr. no. in bl. III	duration since education completed months	interval first employment since education completed months	first employment after completion of education			completed education	
			industrial status	description of occupation	net income per month Rs.	academic	technical
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

FORM IIA:1 (*continued*)

BLOCK VII. Household income and expenditure				BLOCK VIII. Indebtedness.	
income last month from	amount Rs.	expenditure last month on	amount Rs.	total debt on date of survey, taken for	amount Rs.
(1)	(2)	(1)	(2)	(1)	(2)
1. gainful occupation		1. house rent and tax		1. enterprise	
2. non-gainful occupation		2.1 cereals		2. household expenditure	
3. loan		2.2 other food items		3. marriage, house repairs and constructions	
4. charity, bold, remittance		3. fuel and light		4. other purpose (describe)	
5. other (describe)		4. clothing		.....	
.....		5.1 recreation			
6. total		5.2 medicine & doctors		5. total	
		5.3 education			
		5.4 transport			
		5.5 other miscellaneous items			
		6. total			

Signature of candidate..... date.....

Time of receiving schedule..... Time of returning it.....

Time taken in journey..... Time taken in filling.....

FORM IIA-2.

BLOCK I : Information on the sample (3 marks)

Name of factory	Name of the worker.....
Address.....	.....
P.O.....Dist.....	Residential address.....
Industry.	Married or unmarried.....
Occupation of the worker	Religion & Caste.....
.....	State where born.....
Nature of employment permtt./tompy.	Name of informant.....
Token no. if any	Informant's relation to worker.....
Wage period : Month/Fortnight/Week	

BLOCK II. Description of the Family (5 marks)

Serial No.	Name	Relation to worker	Earner or earning dependent or dependent	Residing with worker yes or no	Age in completed years last birth day	Sex
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

	Adults		Adolescents		Children	
	M	F	M	F	M	F
Number of persons living with the worker at his address						
Dependents not living at the above address.						
No. of other boarders and lodgers.						

M = Male, F = Female.

FORM IIA-2 (*continued*)

Block III. Expenditure on food during the week ending..... (20 marks

Commodities	Unit	Price per unit	Quantity consumed	Value	Commodities	Unit	Price per unit	Quantity consumed	Value
			Sr. Ch.	Rs. as. p.				Sr. Ch.	Rs. as. p.
Rice					Milk				
Paddy					Curd				
Chatto					Butter				
Chira/Muri					Ghee				
Other cereals					Bread				
Arhar					Biscuits				
Moong					Mustard oil				
Chana					Other cooking medium				
Masur					Salt				
Other pulses					Sugar				
Potatoes					Molasses				
Brinjals					Tea (country)				
Onions					Tea (ready)				
Other vegetables					Food bought and consumed away from home				
Fruits					Other food stuff				
Fish									
Mutton									
Eggs (fowl)									
Eggs (duck)					Total value				

Block IVB : Expenditure on fuel and lighting during the month ending..... (3 marks)

Commodities	Unit	Price per unit	Quantity consumed	Value
				Rs. as. p.
Coal				
Firewood				
Kerosene oil				
Electricity				
Matches				
Cowdung cakes				
Others				
Total				

C. Expenditure on household requisites during the month ending on..... (3 marks)

Type	Items	No. in use	Approximate cost	Expenditure
				Rs. as. p
Furniture				
Utensils				
Others				
Total				

FORM IIA-2 (*continued*)

Block IVD : Clothing and Equipments (6 marks)

Commodities	No. in use	Total cost	Estimated period that the articles will last	Expenditure during the year ending 15-7-54
		Rs. as. p.		Rs. as. p.
Dhotics				
Shirts				
Coats				
Trousers				
Shorts				
Lungis				
Sarees				
Blouses				
Frocks				
Genji				
Towels				
Bed sheets				
Other cotton clothings				
Pullovers				
Blankets				
Wrappers				
Shoes				
Sandals				
Umbrella				
Others if any				
Total				

E. : Miscellaneous (6 marks)

Items	Expenditure during month ending 15-7-45
	Rs. as. p.
Pan-Supari	
Tobacco (chewing)	
Biri-Cigarettes	
Hair oil	
Barbar	
Toilet soap	
Washing soap	
Washing Soda	
Dhobi	
Liquor (country)	
Liquor (others)	
Ganja	
Opium	
Bhang	
Travelling	
Provident fund contribution	
Repayment of loan	
Interest on loan	
L.I. premium	
Other fund deductions of the factory if any	
Remittances	
Education	
Others	
Total	

F : House (4 marks)

Items	Average cost month/week
	Rs. as. p.
House rent	
Taxes	
Total	

Name of Investigator.....

Date of collection.....

Total time taken excluding journey.....hrs.

STATISTICAL FIELD SURVEY EXAMINATION, 1954.

PART 2B : PRACTICAL

Time : 4 hours | Full marks : 100

N.B. Figures in the margin indicate full marks.

GROUP A.

(Answer any *three* of the following).

1. Table IIB-1 and IIB-2 have been prepared from a recent survey of unemployment in Calcutta. Write a short critical note on the important aspects as revealed in *either* table IIB-1 *or* table IIB-2. (20)

2. Make a comparative study of the expenditure incurred on the different items mentioned in column 1 of table IIB-3 in respect of the six villages for which data are given in the table. Also comment on the relation of the cost of cultivation with the size of farm. (20)

3. Write a report on the data given in table IIB-4. (20)

4. Write a report on wage rate of agricultural and non-agricultural work on the basis of the two tables (1) Table IIB-5—wage rates in different regions for different types of work and (2) table IIB-6—seasonal variation in wage rates for agricultural and non-agricultural work. (20)

GROUP B.

(Answer any *one* of the following).

5. Table IIB-7 shows the percentage expenditure on certain groups of consumption items at different expenditure levels. Write a short critical note giving a comparative study of the weights as between different expenditure levels in the different centres. (36)

6. Write a report on data given in tables IIB-8, IIB-9 and IIB-10. (36)

Neatness (4)

TABLE IIB–1.

UNEMPLOYMENT SURVEY 1953.

(1) Middle Class.

Families and persons are in thousand

Mother-tongue of the head of the family	Number of families			Members in the family				Members in age-group 16–60 years									
								Having full time employment		Having no full time employment but seeking such employment							
										Males	Female	Total		Matriculate and above		Male members willing to do manual work	
	Total	Having persons without full time employment but seeking such employment	Percentage	Total number of all ages	Average number per family	Of age group 16–60 years											
						Number	Percentage to total in col. (5)	Number	Percentage to total in age group in col (7).			Number	Percentage to total in age group in col (7).	Number	Percentage to total in col. (13)	Number	Percentage to totale male in col. (11)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1. Bengali	178.6 (77.8)	78.3 (90.7)	44	1183.7	6.6	769.2 (83.3)	65	273.7 (76.9)	36	115.5 (91.5)	12.7	128.2	17	56.0	44	58.6	51
2. Hindusthani	26.7 (11.6)	4.1 (4.7)	15	123.9	4.6	83.5 (9.0)	67	43.1 (12.1)	52	5.9 (4.7)	0.1	6.0	7	1.9	32	3.2	54
3. Oriya	1.3 (0.6)	0.2 (0.2)	15	3.5	2.7	2.8 (0.3)	80	2.0 (0.6)	71	0.3 (0.2)	0.0	0.3	11	0.0	00	0.2	67
4. South Indian	2.2 (1.0)	0.4 (0.5)	18	10.1	4.6	6.9 (0.7)	68	3.6 (1.0)	52	0.5 (0.4)	0.0	0.5	7	0.4	80	0.2	40
5. Other Indian languages	10.2 (4.4)	1.9 (2.2)	19	52.6	5.2	33.6 (3.6)	64	16.6 (4.7)	49	2.5 (2.0)	0.3	2.8	8	1.0	36	1.2	48
6. English	9.1 (4.0)	1.3 (1.5)	14	33.7	3.7	25.3 (2.7)	75	14.2 (4.0)	56	1.2 (1.0)	0.6	1.8	7	1.0	56	0.5	42
7. Other non-Indian languages.	1.5 (0.6)	0.2 (0.2)	13	6.3	4.2	4.3 (0.5)	68	2.5 (0.7)	58	0.3 (0.2)	0.2	0.5	12	0.2	40	0.1	33
Total	229.6 (100.0)	86.4 (100.0)	38	1413.8	6.2	925.6	65	355.7 (100.0)	38	126.2 (100.0)	13.9	140.1	15	60.5	43	64.0	51

Figures in brackets are percentages.

TABLE IIB-2.

UNEMPLOYMENT SURVEY, 1953.

(2) Other than middle class.

Families and persons are in thousand

Mother-tongue of the head of the family	Number of families			Members in the family				Members in age-group 16–60 years									
						Of age group 16–60 years		Having full time employment		Having no full time employment but seeking such employment							
												Total		Matriculate and above		Male members willing to do manual work	
	Total	Having persons without full time employment but seeking such employment	Percentage	Total number of all ages	Average number per family	Number	Percentage to total in col. (5)	Number	Percentage to total in age group in col (7).	Male	Female	Number	Percentage to total in age group in col (7).	Number	Percentage to total in col. (13)	Number	Percentage to totalo male in col. (11)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1. Bengali	133.2 (34.5)	41.6 (49.3)	31	503.9	3.8	343.8 (40.4)	68	160.9 (32.2)	47	53.6 (48.3)	3.5	57.1	17	3.3	6	48.6	91
2. Hindusthani	186.7 (48.4)	29.9 (35.5)	16	467.3	2.5	369.0 (43.3)	79	252.2 (50.5)	68	40.0 (36.1)	2.2	42.2	11	1.0	2	39.1	98
3. Oriya	19.2 (5.0)	1.8 (2.1)	9	34.1	1.8	31.2 (3.7)	91	26.3 (5.3)	84	2.1 (1.9)	0.1	2.2	7	0.1	5	2.1	100
4. South Indian	1.7 (0.4)	0.3 (0.4)	18	4.7	2.8	3.6 (0.4)	77	2.3 (0.5)	64	0.3 (0.3)	0.1	0.4	11	0.0	0	0.3	100
5. Other Indian languages	41.4 (10.7)	10.1 (12.0)	24	135.0	3.3	96.5 (11.3)	71	52.9 (10.6)	55	14.3 (12.9)	0.3	14.6	15	0.4	3	13.4	94
6. English	0.7 (0.2)	0.2 (0.2)	29	3.1	4.4	1.9 (0.2)	61	1.0 (0.2)	53	0.2 (0.2)	0.1	0.3	16	0.1	33	0.2	100
7. Other Non-Indian languages	3.0 (0.8)	0.4 (0.5)	13	7.8	2.6	5.6 (0.7)	72	3.8 (0.7)	68	0.4 (0.3)	0.0	0.4	7	0.0	0	0.4	100
Total	385.9 (100.0)	84.3 (100.0)	22	1155.9	3.0	851.6 (100.0)	74	499.4 (100.0)	59	110.9 (100.0)	6.3	117.2	14	4.9	4	104.1	94

Figures in brackets are percentages.

TABLE IIB-3.

Average cost of firm cultivation per family in each of the six villages.

Items of cost	(1) Hanskhali (Nadia)		(2) Sibdanga Badarpur (Murshidabad)		(3) Iswampur (Burdwan)		(4) Kukradihi (Birbhum)		(5) Rangamatia (Bankura)		(6) Paschim Khairabari (Jalpaiguri)	
	Average cost	Percentage to total cost	Average cost	Percentage to total cost	Average cost	Percentage to total cost	çAverage cost	Percentage to total cost	çAverage cost	Percentage to total cost	çAverage cost	Percentage to total cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Rs. as.		Rs. as.		Rs. as.		Rs. as.		Rs. as.		Rs. as.	
(1) Labour	93— 4	42	132— 0	42	83— 2	36	98—12	43	229— 6	72	30—10	40
(2) Cattle	71— 4	32	92—10	29	96—14	42	44—12	19	47— 6	15	38— 2	50
(3) Seed	22— 3	10	23—15	8	17— 8	8	20— 6	9	14— 2	4	6— 2	8
(4) Manure	11— 1	5	54—12	17	10— 8	5	51— 2	22	26— 3	8	—	—
(5) Rent	25—12	11	13— 7	4	19—13	9	16— 0	7	3—15	1	1— 2	2
Total	223— 8	100	316—12	100	227—13	100	231— 0	100	321— 0	100	76— 0	100
Average size of farm	4.26 acres		3.65 acres		4.50 acres		6.30 acres		3.92 acres		3.00 acres	

TABLE IID-4.

Average domestic expenditure per family in each of the six villages.

Items	(1) Hanskhali (Nadia)		(2) Sibdanga Radarpur (Murshidabad)		(3) Iswampur (Burdwan)		(4) Kukradihi (Birbhum)		(5) Rangamatia (Bankura)		(6) Paschim Khairabari (Jalpaiguri)	
	Average expenditure	Percentage to total expenditure	Average expenditure	Percentage to total expenditure	Average expenditure	Percentage to total expenditure	Average expenditure	Percentage to total expenditure	Average expenditure	Percentage to total expenditure	Average expenditure	Percentage to total expenditure
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Rs. as.		Rs. as.		Rs. as.		Rs. as.		Rs. as.		Rs. as.	
I. Food:												
Rice	122— 8	27	44— 0	14	77— 2	19	92—10	23	198— 4	53	405—13	81
Pulses	86— 0	19	14— 8	4	18—12	5	26—15	7	16— 0	4	6— 9	1
Sugar (Gur)	12— 8	2	27— 0	9	26—11	7	25— 7	6	7—10	2	9— 0	2
Salt	8—14	2	7— 8	2	10— 8	3	14—13	4	7— 3	2	6— 3	1
Meat, fish etc.	60— 4	13	82—14	26	25— 7	6	14— 6	4	9—12	3	6— 5	1
Milk	21— 8	5	25— 0	8	103— 5	27	54— 0	13	36— 9	10	33— 0	7
Species	8— 4	2	5— 0	2	—	—	14— 9	4	—	—	—	—
Mustard oil	41— 4	9	27—12	9	47— 0	12	42— 9	10	32— 0	8	1—14	—
Vegetables	15— 8	4	35— 0	11	—	—	29— 6	7	—	—	—	—
Other foodstuffs	—	—	—	—	—	—	15— 6	4	—	—	—	—
II. Clothing:												
Dhuti and Sari	37—14	9	21— 5	7	46— 7	11	40— 6	10	22— 0	6	12—11	3
III. Fuel and lighting:												
Coal and kerosine	22—13	5	3— 5	1	13— 7	3	18— 8	5	36—12	10	6— 6	1
IV. Luxuries:												
Tobacco and betel	13— 6	3	22— 8	7	30— 9	7	14— 6	3	9— 6	2	14—10	3
Total	450—11	100	316—12	100	404— 4	100	403— 5	100	375— 8	100	502— 7	100
Percentage of this total to actual total expenditure	85		73		59		78		99		87	
Average size of family	5		5		4		7		6		6	

TABLE IIB-5.

Wage rates in different regions for different types of work.

Districts	Average wage rate in rupees per day		
	agricultural	non-agricultural	total
1. Bankura	0.65	0.77	0.75
2. Birbhum	0.00	0.72	0.82
3. Burdwan	0.97	0.88	0.90
4. Dinajpur	—	—	—
5. Hooghly	1.36	1.34	1.35
6. Jalpaiguri	1.21	1.05	1.10
7. Malda	1.73	0.99	1.67
8. Midnapore	0.89	0.88	0.89
9. Murshidabad	0.01	0.68	0.77
10. Nadia	—	—	—
11. 24-Parganas	1.69	1.40	1.52
West Bengal	1.01	0.83	0.91

TABLE IIB-6.

Seasonal variation in wage rates for agricultural and non-agricultural work.

Season	Wage rate (cash and kind) in rupees, per day.		
	agricultural	non-agricultyral	total
January—February	0.94	0.84	0.88
March—April	0.92	0.98	0.98
May—June	1.02	0.88	0.93
July—August	1.02	0.72	0.90
September—October	0.95	0.82	0.88
November—December	1.03	0.82	0.93
All Seasons	1.01	0.83	0.91

TABLE IIB-7.

Percentage expenditure on different groups of items of consumption by different expenditure levels.

Centre—CALCUTTA

sl. no.	groups of consumption.	monthly expenditure levels (in rupees)				
		1-100	101-200	201-350	351-700	701 & above
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Food	58.55	54.58	50.47	44.65	33.29
2	Fuel & light	7.15	5.49	4.88	4.26	3.58
3	Clothing	5.37	6.23	5.74	5.47	5.88
4	Housing	9.61	9.31	8.52	9.16	9.73
5	Miscellaneous	20.32	24.39	30.39	36.46	48.52
	Total	100.00	100.00	100.00	100.00	100.00

Centre—JALPAIGURI

1	Food	62.37	65.64	63.21	52.09	35.87
2	Fuel & light	7.49	6.34	5.33	3.93	3.05
3	Clothing	5.71	5.96	5.89	5.18	4.25
4	House rent	1.92	3.61	3.04	3.47	7.09
5	Miscellaneous	22.51	18.45	22.53	35.33	49.74
	Total	100.00	100.00	100.00	100.00	100.00

Centre—DARJEELING

1	Food	62.02	61.86	52.39	38.52	38.96
2	Fuel & light	9.83	8.80	7.80	5.82	3.73
3	Clothing	7.70	7.99	7.51	7.08	5.77
4	House rent	5.20	4.91	5.16	9.11	5.70
5	Miscellaneous	14.26	16.44	27.14	39.47	46.84
	Total	100.00	100.00	100.00	100.00	100.00

TABLE IIB-8

ESTIMATES OF AREA AND PRODUCTION OF SUGARCANE IN WEST BENGAL DURING THE YEARS 1946-47 TO 1950-51.

Districts	1946-47		1947-48		1948-49		1949-50		1950-51	
	Area (in thousand acres)	Production (in thousand maunds)	Area (in thousand acres)	Production (in thousand maunds)	Area (in thousand acres)	Production (in thousand maunds)	Area (in thousand acres)	Production (in thousand maunds)	Area (in thousand acres)	Production (in thousand maunds)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) 24-Parganas	10.6	5,160.2	10.6	4,553.3	11.0	5,668.8	7.2	3,078.9	1.6	704.0
(2) Nadia	3.0	1,232.0	2.2	1,407.6	3.6	1,391.4	3.4	1,453.9	5.2	2,288.0
(3) Murshidabad	11.0	5,078.3	11.0	4,725.1	11.4	4,876.1	8.2	3,280.0	10.9	4,796.0
(4) Burdwan	9.6	4,527.9	10.3	4,902.0	12.1	5,175.6	12.0	5,088.0	7.2	2,833.0
(5) Birbhum	8.1	3,528.8	8.1	3,145.6	8.5	2,934.9	7.6	1,644.6	4.6	2,163.0
(6) Bankura	2.9	1,338.8	3.0	1,288.7	3.1	1,597.5	3.5	1,803.2	3.0	1,905.0
(7) Midnapore	6.0	2,308.0	4.2	1,587.8	3.9	1,869.1	4.4	2,266.9	6.7	3,071.0
(8) Hooghly	2.1	914.9	3.1	1,475.4	3.1	1,198.1	2.3	920.0	3.0	969.0
(9) Howrah	2.5	1,179.2	2.5	1,292.9	2.0	1,030.7	1.5	772.8	2.5	1,100.0
(10) Jalpaiguri	1.7	698.1	1.7	660.2	1.9	812.8	1.5	772.8	0.4	176.0
(11) Darjeeling	0.4	205.5	0.4	206.9	0.4	206.2	0.2	100.0	0.2	96.0
(12) Malda	1.4	538.5	2.0	1,245.7	2.6	1,112.1	3.4	1,360.0	5.7	2,508.0
(13) West Dinajpur	1.6	573.9	2.1	815.5	2.1	898.3	2.1	1,066.8	1.4	616.0
Total West Bengal	60.9	27,293.1	63.1	27,306.7	65.7	28,771.6	57.3	24,207.9	52.4	23,245.0

TABLE IIB-9.

MARKETABLE SURPLUSES OF SUGARCANE AND GUR RESPECTIVELY IN WEST BENGAL DURING THE YEARS 1946-47 TO 1950-51.

Districts	Marketable surplus (in thousand maunds)									
	1946-47		1947-48		1948-49		1949-50		1950-51	
	Cane	Gur	Cane	Gur	Cane	Gur	Cane	Gur	Cane	Gur
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) 24-Parganas	153.1	387.69	136.6	341.50	170.1	425.16	92.4	230.92	21.1	52.80
(2) Nadia	93.6	86.73	109.1	98.88	96.0	98.93	94.7	103.92	151.9	163.27
(3) Murshidabad	388.0	357.51	366.2	331.94	336.5	346.69	213.9	234.56	218.5	342.24
(4) Burdwan	135.8	339.59	147.0	367.65	155.3	388.17	170.6	426.60	85.0	212.48
(5) Birbhum	105.9	264.66	94.4	235.92	88.0	220.12	49.4	123.35	65.5	163.73
(6) Bankura	40.2	100.41	38.7	96.65	47.9	119.81	54.0	135.24	57.2	142.88
(7) Midnapore	69.2	172.10	47.6	119.09	56.1	140.18	68.0	170.02	92.1	230.33
(8) Hooghly	27.4	68.62	44.3	110.66	35.0	89.86	27.6	69.00	29.1	72.68
(9) Howrah	35.4	88.44	38.8	96.97	30.0	77.30	23.2	57.96	33.0	82.50
(10) Jalpaiguri	20.9	52.36	19.8	49.52	24.4	60.96	23.2	57.96	5.3	13.20
(11) Darjeeling	6.2	15.41	6.2	15.52	6.2	15.47	3.0	7.50	2.9	7.20
(12) Malda	16.2	40.39	37.4	93.43	33.4	83.41	40.8	102.00	75.2	188.10
(13) West Dinajpur	17.2	43.04	24.5	61.16	26.9	67.37	32.0	80.01	18.5	46.20
Total West Bengal	1,109.1	2,017.95	1,110.6	2,018.89	1,107.6	2,133.43	892.8	1,708.93	955.3	1,717.61

TABLE IIB-10.

TOTAL VALUES OF THE MARKETABLE SURPLUSES OF SUGARCANE (CANE AND GUR) IN WEST BENGAL DURING THE YEARS 1946-47 TO 1950-51

Years	Total marketable surpluses of gur (in thousand maunds)	Total values of gur (in thousand rupees)	Total marketable surpluses of cane (in thousand maunds)	Total values of cane (in thousand rupees)	Total values of cane and gur (in thousand rupees)
(1)	(2)	(3)	(4)	(5)	(6)
1946—47	2,017.95	37,304	1,109.1	2,218	39,522
1947—48	2,018.89	28,922	1,110.6	2,221	31,143
1948—49	2,133.43	34,529	1,107.6	1,731	00,260
1949—50	1,798.93	41,570	892.8	1,395	42,965
1950—51	1,717.61	45,191	955.3	1,072	46,863