2019

B.Sc.

4th Semester Examination

STATISTICS (Honours)

Paper - C8P

[Practical]

Full Marks : 20　　　　　　　　Time : 3 Hours

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

Answer *all* questions.

1. For a socio-economic survey, all the villages in a region including the uninhabited ones were grouped into 4 strata on the basis of altitude above sea level and population density and from each stratum, 10 villages were selected with SRSWR. The data on the number of households in each of the sample villages are given in the following table.

Stratum No.	Total No. of villages	Total no. of households in the samples villages									
		1	2	3	4	5	6	7	8	9	10
1.	1411	43	84	93	0	10	44	0	124	13	0
2.	4705	50	147	62	87	84	158	176	104	56	160
3.	2558	228	262	110	213	139	178	334	0	63	220
4.	14997	17	34	25	34	36	0	25	7	15	31

(a) Examine total number of households unbiasedly and estimate its standard error. 3

(b) Examine whether there has been any gain due to stratification as compared to unstratified SRSWR. 4

2. An experienced farmer makes an eye estimate of the weight of peaches on each tree in an orchard of 200 trees. He finds a total weight of 11,600 pounds. The peaches are picked and weight for a simple random sample of 10 trees which yield the following results.

Social No. of trees	Actual weight (in lbs)	Estimated weight (in lbs)
1	61	59
2	42	47

3	50	52
4	58	60
5	67	67
6	45	48
7	39	44
8	57	58
9	71	76
10	53	58

Compute the ratio and regression estimates of the total actual weight of peaches of all the 200 trees in the orchard and compare the precision of the two estimates.   2+2+4

3. Laboratory Note Book.   2

4. Viva-Voce.   3