QUESTIONS

1. A set of data involving four "tropical feed stuffs A, B, C, D" tried on 20 chicks is given below. All the twenty chicks are treated alike in all respects except the feeding treatments and each feeding treatment is given to 5 chicks. Analyse the data.

Feed	Gain in Weight					Total T_i
A	55	49	42	21	52	219
B	61	112	30	89	63	355
C	42	97	81	95	92	407
D	169	137	169	85	154	714

2. Consider the results given in the following table for an experiment involving six treatments in four randomised blocks. The treatments are indicated by numbers within parentheses.

Blocks	Yield for a randomised block experiment					
1	(1)	(3)	(2)	(4)	(5)	(6)
	24.7	27.7	20.6	16.2	16.2	24.9
2	(3)	(2)	(1)	(4)	(6)	(5)
	22.7	28.8	27.3	15.0	22.5	17.0
3	(6)	(4)	(1)	(3)	(2)	(5)
	26.3	19.6	38.5	36.8	39.5	15.4
4	(5)	(2)	(1)	(4)	(3)	(6)
	17.7	31.0	28.5	14.1	34.9	22.6

Test whether the treatments differ significantly. Also

(i) determine the critical difference between the means of any two treatments;

(ii) obtain the efficiency of this design relative to its layout as $C.R.D.$

3. An experiment was carried out to determine the effect of claying the ground on the field of barley grains; amount of clay used were as follows :
   A : No clay
   B : Clay at 100 per acre
   C : Clay at 200 per acre
   D : Clay at 300 per acre.
   The yields were in plots of 8 meters by 8 meters and are given in the following table.

	I	II	III	IV
I	D 29.1	B 18.9	C 29.4	A 5.7
II	C 16.4	A 10.2	D 21.2	B 19.1
III	A 5.4	D 38.8	B 24.0	C 37.0
IV	B 24.9	C 41.7	A 9.5	D 28.9

   (i) Perform the ANOVA and calculate the critical difference for the treatment mean yields.

   (ii) Calculate the efficiency of the above Latin Square Design over
      (a) $R.B.D.$
      (b) $C.R.D.$

   (iii) Yield under 'A' in the first column was missing. Estimate the missig value and carry out the ANOVA.