ANALYSIS OF CRD (Complete Randomized Design)

1. Following experiment was designed to determine whether there is any significant different effect in the 4 different field: gain the Weight of pigs .The following table gives the gain on weight points by each of the pig for a fixed length of time analyse the data

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| A | 133 | 144 | 135 | 149 | 143 | -- |
| B | 163 | 148 | 152 | 148 | 157 | 153 |
| C | 210 | 220 | 233 | 226 | -- | -- |
| D | 195 | 184 | 199 | 187 | 193 | -- |

**R code:**

weight=c(133,144,135,149,143,163,148,152,148,157,153,210,220,233,226,

195,184,199,187,193)

Treat=c(rep('A',5),rep('B',6),rep('C',4),rep('D',5))

one\_way=aov(weight~Treat)

F\_tab=qf(p=0.05, df1=3, df2=16, lower.tail=F)

F\_tab

summary(one\_way)

TukeyHSD(one\_way)

1. The following is the layout and the yield of 5 pods of peas identify the design for the data unsuitable form and carry out the analysis of the variance (ANOVA) apply the critical

difference test if necessary

|  |  |  |  |
| --- | --- | --- | --- |
| A | 190 | 203 | 223 |
| B | 230 | 217 | 217 |
| C | 213 | 213 | 221 |
| D | 234 | 249 | 209 |
| E | 224 | 292 | 251 |

yield=c(190,203,223,230,217,217,213,213,221,234,249,209,224,292,251)

Treat=c(rep('A',3),rep('B',3),rep('C',3),rep('D',3),rep('E',3))

one\_way=aov(yield~Treat)

one\_way

F\_tab=qf(p=0.05, df1=4, df2=10, lower.tail=F)

F\_tab

summary(one\_way)

ANALYSIS OF RBD (Randomized Block Design)

1. An experiment was carried out on wheat of 3 treatments in 4 Randomised blocks .The plan and yield are given below ,Analyse the data and data write conclusion

i)Also verify that which of treatments differ significantly

ii)Find the efficiency of RBD over CRD

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | 2 | 3 | 4 |
| A(8) | C(10) | A(6) | B(10) |
| C(12) | B(8) | B(9) | A(8) |
| B(10) | A(8) | C(10) | C(9) |

wht=c(8,10,6,10,12,8,9,8,10,8,10,9)

block=c(rep(c('I','II','III','IV'),3))

treat=c('A','C','A','B','C','B','B','A','B','A','C','C')

yld=data.frame(wht,treat,block)

yld

rbd=aov(wht~treat+block,data=yld)

summary(rbd)

F\_tab=qf(p=0.05, df1=2, df2=6, lower.tail=F)

F\_tab

F\_tab=qf(p=0.05, df1=3, df2=6, lower.tail=F)

F\_tab

1. A Research for Variety was conducted at 5 of 6 plots each The yield in pounds per plot over (1/20) th of acre obtained from an experiment are as given below

i)Analyse the design and comment on your findings

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| BLOCK | 1 | 2 | 3 | 4 | 5 |
| V1 | 30 | 39 | 56 | 38 | 44 |
| V2 | 23 | 22 | 43 | 45 | 51 |
| V3 | 34 | 28 | 43 | 36 | 23 |
| V4 | 25 | 25 | 31 | 35 | 38 |
| V5 | 20 | 28 | 49 | 32 | 40 |
| V6 | 13 | 32 | 17 | 20 | 30 |

# RBD

yield=c(30,39,56,38,44,23,22,43,45,51,34,28,43,36,23,25,25,31,35,38,20,28,49,

32,40,13,32,17,20,30)

block=c(rep(c('I','II','III','IV','V'),6))

variety=c(rep("V1",5), rep("V2",5),rep("V3",5),

rep("V4",5),rep("V5",5),rep("V6",5))

data1=data.frame(yield, variety,block)

rbd=aov(yield~varity+block, data = data1)

summary(rbd)

F\_tab=qf(p=0.05, df1=5, df2=20, lower.tail=F)

F\_tab

F\_tab=qf(p=0.05, df1=4, df2=20, lower.tail=F)

F\_tab