Roll No.: 40023

Date:

**Aim:** To perform practical of Analysis of Variance .

**Program Code:**

y1=c(18.2,20.1,17.6,16.8,18.8,19.7,19.1)

y2=c(17.4,18.7,19.1,16.4,15.9,18.4,17.7)

y3=c(15.2,18.8,17.7,16.5,15.9,17.1,16.7)

y=c(y1,y2,y3)

n=rep(7,3)

n

group =rep(1:3,n)

group

tmp=tapply(y,group,stem)

stem(y)

tmpfn=function(x)c(sum=sum(x),mean=mean(x),var=var(x),n=length(x))

tapply(y,group,tmpfn)

tmpfn(y)

data=data.frame(y=y,group=factor(group))

fit=lm(y~group,data)

anova(fit)

df=anova(fit)[,"Df"]

names(df)=c("trt","err")

df

alpha=c(0.05,0.01)

qf(alpha,df["trt"],df["err"],lower.tail=FALSE)

anova(fit)["Residuals","Sum Sq"]

anova(fit)["Residuals","Sum Sq"]/qchisq(c(0.025,0.975),18,lower.tail=FALSE)

**Conclusion:** Practical of Analysis of Variance has been executed successfully.