**COST PRACTICAL**

**Q1. Create Matrix using R and perform the operation addition,Inverse,Transpose and multiplication operations.**

**Commands :-**

A<-matrix(c(2,3,-2,1,2,2),3,2)

Print(A)

B<-matrix(c(1,4,-2,1,2,1),3,2)

Print(B)

Addition

C<-A+B

Print(c)

Inverse matrix

E<-matrix(c(2,1,6,1,3,4,6,4,-2),3,3)

Print(E)

AI<-solve(E)

Print(AI)

Transpose matrix

ATT<-t(A)

Print(ATT)

Multiplication matrix

D<-A\*B

Print(D)

**Q2. Using R execute the statistical functions mean,median,quartile,range,Inter-quartile range, histogram.**

**Mean**

x<-c(12,7,3,4,2,18,2,54,-21,8,-5)

mean<-mean(x)

print(mean)

median

x<-c(12,7,3,4,2,18,2,54,-21,8,-5)

median<-median(x)

print(median)

mode

getmode<-function(v){

uniqv<- unique(v)

uniqv[which.max(tabulate(match(v,uniqv)))]

}

V<-(2,1,2,3,1,2,3,4,1,5,5,3,2,3)

Result<-getmode(v)

Print(result)

Quartile

nuclear<-c(7,20,16,6,58,9,20,50,23,33,8,10,15,16,104)

quartile(nuclear)

Range and histogram

x<-c(1,2,3,2,3,4,8,12,43,-4,-1)

r<-range(x)

print(r)

diff(r)

hist(r)

inter-quartile range

x<-c(12,19,21,24,26,29,33,35,36)

IQR(x)

**Q3. Using R import the data from excel /.CSV file and per form the above function.**

|  |  |  |
| --- | --- | --- |
|  | **No.** | **x** |
| 1 | 2 | 12 |
| 2 | 2 | 7 |
| 3 | 3 | 3 |
| 4 | 4 | 4 |
| 5 | 5 | 2 |
| 6 | 6 | 18 |
| 7 | 7 | 2 |
| 8 | 8 | 54 |
| 9 | 9 | -21 |
| 10 | 10 | 8 |
| 11 | 11 | -5 |

data1<-read.csv(file.choose(),header=)

mean(x)

median(x)

**Q4.Using R import the data from excel /.CSC file and calculate the standard deviation, variance and co-variance.**

(1) Standard Deviation:

Example:

|  |  |
| --- | --- |
|  | **X** |
| 1 | 2 |
| 2 | 3 |
| 3 | 7 |
| 4 | 8 |
| 5 | 10 |

data1<-read.csv(file.choose(),header=T)

data1

sd(data$x)

variance

data1<-read.csv(file.choose(),header=T)

data1

**Q5.Using R import the data from Excel /.CSV and draw the**

**skewnessand kurtosis.**

Seema is interested on the elapse time (in minutes.). She spends on riding

a tricycle from home to school for thre

e weeks(excluding weekends).She

obtain the following data:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 19.09 | 19.55 | 17.69 | 17.63 | 25.15 | 27.27 | 25.24 | 21.65 | 20.92 | 22.61 | 15.71 | 22.04 | 22.60 | 24.25 |

Compute and interpret the skewness and kurtosis.

data1<-read.csv(file.choose(),header=T)

data1

time<-c(19.09,19.55,17.69,17.63,25.15,27.27,25.24,21.65,20.92,22.61,15.71,22.04,22.60,24.25)….write this in single line

library(moments)

skewness(time)

kurtosis(time)

**Q6. Using R perform the binomial and normal distribution on the data**

x<-seq(0,50,by=1)

y<-dbinom(x,50,0.5)

png(file=”dbinom.png”)

dev.off()

null device

plot(x,y)

**Q7.** **Perform the correlation using R tool.**

year=c(2000,2001,2002,2003,2004)

> rate=c(9.34,8.50,7.62,6.93,6.60)

plot(year,rate)

cor(year,rate)