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=T)
mean(data1$x)
median(data1$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
var(data1$x)
```

co variance

```
data1<-read.csv(file.choose(),header=T)
data1
cov(data1$x)
```

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)