**EXPERIMENT 4**

**CENTRAL TENDENCY AND DATA DISPERSION USING R**

# Code-

# central tendancy consists of the following measures -

#       1. arithmetic mean

#       2. geometric mean

#       3. harmonic mean

#       4. median

#       5. mode

# 1. ARITHEMETIC MEAN

x <- c(3, 7, 5, 13, 20, 23, 39, 23, 40,

    23, 14, 12, 56, 23, 29, 56, 37,

    45, 1, 25, 8, 56, 56)

am = mean(x)

print("Arithmetic mean : ")

print(am)

# 2. GEOMETRIC MEAN

gm = (prod(x)^(1/length(x)))

print("geometric mean : ")

print(gm)

# 3. HARMONIC MEAN

hm = (1/mean(1/x))

print("harmonic mean : ")

print(hm)

# 4. MEDIAN

print("Median : ")

print(median(x))

# 5. MODE

# generating frequency table using table() function

t <- table(x)

print(t)

# finding mode

m <- names(t)[which(t == max(t))]

print("Mode : ")

print(m)

# data dispersion ahows the spread of data around a point.

#       1. variance

#       2. standard deviation

#       3. range

# 1. VARIANCE

print("Variance : ")

print(var(x))

# 2. STANDARD DEVIATION

print("Standard Deviation : ")

print(sqrt(var(x)))

# 3. RANGE

print("Range : ")

r = max(x) - min(x)

print(r)

**#Output -**

