

Lab Sheet – 9

```
setwd("C:\\Users\\aa\\Desktop\\IT24100463 PS Lab-9")
```

```
> setwd("C:\\Users\\aa\\Desktop\\IT24100463 PS Lab-9")
```

Q1)

1. Assume that the time taken to bake a batch of cookies is normally distributed with mean 45 minutes and standard deviation 2 minutes.

i. Generate a random sample of size 25 for the baking time

```
#Q1 part I
data <- rnorm(25, mean = 45, sd = 2)
data

> data <- rnorm(25, mean = 45, sd = 2)
> data
[1] 46.47045 44.03998 45.12634 41.51337 40.39777 42.43345 45.38531 47.00048 43.70168 42.55361
[11] 45.11341 44.55168 47.14362 43.46556 46.25965 46.10854 44.41119 44.48574 45.49304 45.02974
[21] 45.76111 46.98285 43.33477 43.01357 43.50072
```

ii. Test whether the average baking time is less than 46 minutes at a 5% level of significance.

```
#Q2 part II
result <- t.test(data, mu = 46, alternative = "less")
result

> result <- t.test(data, mu = 46, alternative = "less")
> result
```

One Sample t-test

```
data: data
t = -4.1923, df = 24, p-value = 0.0001619
alternative hypothesis: true mean is less than 46
95 percent confidence interval:
 -Inf 45.13057
sample estimates:
mean of x
 44.5311
```