

# ASSIGNMENT 10

**NAME: TARUN ADITHYA CH**

**SUBJECT: MAT1011 L4**

**Registration no.: 19BCI7005**

**SLOT : L4**

1. It is desired to determine whether there is less variability in the silver plating done by Company 1 than in that done by Company 2. If independent random samples of size 12 of the two companies' work yield  $s_1 = 0.035$  mil and  $s_2 = 0.062$  mil, test the null hypothesis  $H_0: \sigma_1^2 = \sigma_2^2$  against the alternative hypothesis  $H_a: \sigma_1^2 < \sigma_2^2$  at the 0.05 level of significance.

```
s1=0.035
> s2=0.062
> n1=12-1
> n2=12-1
> plot.new()
> m=(s2/s1)^2
> m
> pf(m,n2,n1,lower.tail=FALSE)
[1] 0.03531487
> pf(m,n2,n1,lower.tail=TRUE)
[1] 0.9646851
> p=1- pf(m,n2,n1,lower.tail=TRUE)
> p
[1] 0.03531487
```

$p < 0.05$  hence the conclusion is true.