Laxmi Charitable Trust's

Sheth L.U.J College of Arts & Sir M.V. College of Science and Commerce

Department of Information Technology (B.Sc.I.T Semester IV)

Data Analysis

Practical-VII

Roll No.:S006	Name:Nandini Chaudhari
Class:SYIT	Batch:01
Date of Assignment:17/01/2026	Date/Time of Submission:17/01/2026

Aim:- Performing one-way ANOVA using aov() (R).

Code:-

```
library(psych)
# Load dataset
data(PlantGrowth)
# One-way ANOVA
one_way <- aov(weight ~ group, data = PlantGrowth)
# Show output
summary(one_way)
```

Output:-

```
> library(psych)
> # Load dataset
> data(PlantGrowth)
> # One-way ANOVA
> one_way <- aov(weight ~ group, data = PlantGrowth)
> # Show output
> summary(one_way)
            Df Sum Sq Mean Sq F value Pr(>F)
group        2  3.766  1.8832   4.846 0.0159 *
Residuals   27 10.492  0.3886
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

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Practical-VIII

Roll No.:S006	Name:Nandini Chaudhari
Class:SYIT	Batch:01
Date of Assignment:17/01/2026	Date/Time of Submission:17/01/2026

Aim:-Performing two-way ANOVA using aov() (R).

Code:-

```
library(psych)
# Load dataset
data(CO2)
# Two-way ANOVA
two_way <- aov(uptake ~ Type * Treatment, data = CO2)
# Show output
summary(two_way)
```

Output:-

```
> library(psych)
> # Load dataset
> data(CO2)
> # Two-way ANOVA
> two_way <- aov(uptake ~ Type * Treatment, data = CO2)
> # Show output
> summary(two_way)
               Df Sum Sq Mean Sq F value   Pr(>F)
Type            1   3366    3366  52.509 2.38e-10 ***
Treatment       1    988     988  15.416 0.000182 ***
Type:Treatment  1    226     226   3.522 0.064213 .
Residuals      80   5128      64
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

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Data Analysis

Practical-IX

Roll No.:S006	Name:Nandini Chaudhari
Class:SYIT	Batch:01
Date of Assignment:17/01/2026	Date/Time of Submission:17/01/2026

Aim:- Conducting Chi-square tests using chisq.test() (R)

Code:-

```
library(psych)

# Load dataset

data(Titanic)

# Create contingency table

class_survival <- margin.table(Titanic, c(1, 4))

# Chi-square test

chisq.test(class_survival)
```

Output:-

```
> library(psych)
> # Load dataset
> data(Titanic)
> # Create contingency table
> class_survival <- margin.table(Titanic, c(1, 4))
> # Chi-square test
> chisq.test(class_survival)

        Pearson's Chi-squared test

data:  class_survival
X-squared = 190.4, df = 3, p-value < 2.2e-16
```