

**Avinashilingam Institute for Home Science and Higher Education for Women
Coimbatore – 641 043
Continuous Internal Assessment – II , April 2025
Semester – II**

**Class: I PG
Major: M.Sc, MBA & M.com**

**Time: 2hrs
Max. Marks: 60**

23MECI01 – Analytical Tools in Research

Course Outcome :

1. Knowledge in doing simple computations using Excel sheet.
2. Understanding the basic of data entry and importing and exporting data.
3. Comprehend the technique of data visualization and descriptive statistics.
4. Acquire proficiency in computing multivariate statistical techniques.
5. Proficiency to apply analytical skill in research.

Part – A

Choose the correct answer

6 x 1 = 6

1. In SPSS, which menu is used to import data from Excel?
a) File – Open b) Data- Import c) Analyze – Import d) Transform – Convert
CO2K1
2. What does ANOVA test for?
a) Relationship between two variables
b) Difference between means of multiple groups
c) Frequency distribution of data
d) Strength of association between variables
CO3K2
3. A paired t- test is used when :
a) Two independent groups are compared
b) The same group is measured twice under different conditions
c) There are more than two groups
d) Data is non- numeric
CO4K2
4. Which statistical test is best for testing the association between two categorical variables?
a) t-test b) ANOVA c) chi-square test d) Regression Analysis
CO4K2
5. In SPSS, which graph is most suitable for showing frequency distribution?
a) Scatter plot b) Histogram c) Pie chart d) Box plot
CO3K2
6. Factor Analysis in SPSS is used to :
a) Predict future values based on past data
b) Reduce a large number of variables into fewer factors
c) Compare means between groups
d) Test the relationship between two categorical variables
CO4K2

Part-B

Answer the following.

Answers should not exceed 400 words or two pages.

(3 x 6 = 18)

- 7.a. State the steps for the estimation of one sample t test in SPSS.
or
CO3K3
- 7.b. What are the steps for calculating the one way ANOVA in SPSS?
CO4K2
- 8.a. What are the steps for the estimation of partial correlation in SPSS?
or
CO3K2
- 8.b. What are the steps for the calculating chi square in SPSS?
CO4K3
- 9.a. State the steps for the estimation of Discriminant Analysis in SPSS?
or
CO4K3
- 9.b). State the steps for Curve estimation in SPSS?
CO3K4

Part –C

Answer should not exceed 800 words or four pages (3 x 12=36)

10.a. Explain the steps for the estimation of Factor Analysis. CO4K3

or

10.b. Procedure for a Simple Linear Regression Equation CO3K4

11.a. Explain and interpret a Karl Pearson's correlation coefficient for the following data: CO5K4

Yield of Wheat	Fertilizer
500	50
600	55
400	40
400	42
800	60
900	65
960	70

or

11.b. Interpret for the following result obtained through Simple linear Regression equation : CO5K4

Table : 1 (a) Variables Entered/ Removed

Model	Variables Entered	Variables Removed	Method
1	Income	-	Enter

Dependent Variable: Consumption

Table : 1 (b) Model Summary

Model	R	R square	Adjusted R Square	Std. Error of the estimate
1	.983	.967	.963	322.114

Predictors : (Constant), Income

Table : 1 (c) ANOVA

Model		Sum of Squares	Df	Mean square	F	Sig
1	Regression	24490939.394	1	24490939.394	236.040	.000
	Residual	830060.606	8	103757.576		
	Total	25321000.000	9			

a. Dependent variable : Consumption

12.a. List out the procedure to find out the bi-variate frequency distribution for the following data through SPSS. CO3K4

Age	Education
15	1
15	1
20	2
25	3
30	4
35	5
40	1

or

12.b. What are the steps for calculating Simple correlation analysis. CO3K4