



Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD (now MoE)

Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC

Coimbatore - 641 043, Tamil Nadu, India

Master's Degree Examination – May 2025

II Semester

Class :I P.G.

Major :Applied Psychology/Commerce CA/M.B.A./M.B.A. IT

Time: 3 Hours

Max. Marks: 100

23MECI01 Analytical Tools in Research

Course Outcomes:

CO1:Knowledge in doing simple computations using Excel sheet

CO2:Understanding the basics of data entry and importing and exporting data

CO3:Comprehend the technique of data visualization and descriptive statistics

CO4:Acquire proficiency in computing multivariate statistical techniques

CO5:Proficiency to apply analytical skill in research

Part A

10 x 1 = 10

Choose the Correct Answer

1. What is the primary function used for addition in MS Excel? CO1K1
a. =Multiply() b. =Sum() c. =Subtract() d. =Divide()
2. State the function used to multiply the values in Excel CO1K1
a.=Add() b.=Mult() c. =Product() d. =Div()
3. Which format is NOT a valid option for exporting data from SPSS? CO2K2
a. .Sav b. .ppt c. .csv d. .xlsx
4. Which SPSS menu is used for transforming variables? CO2K2
a. Analyze b. Transform c. Data d. File
5. Which SPSS procedure is used to compare the means of two independent groups? CO3K3
a. T – Test b. ANOVA c. Chi – square d. Regression
6. A researcher wants to compare the average scores of two groups of students on an exam. CO3K3
How would they use SPSS to conduct an independent samples t-test?
a. Use the "Analyze" -> "Compare Means" -> "Independent Samples T-Test" menu.
b. Use the "Analyze" -> "Correlate" -> "Bivariate" menu.
c. Use the "Analyze" -> "Regression" -> "Linear" menu.
d. Use the "Graphs" -> "Bar" menu.
7. Which SPSS procedure is used to compare the means of two continuous variables? CO4K4
a. paired T – Test b. ANOVA c. Chi – square d. Regression
8. Which of the following is an output of factor analysis in SPSS? CO4K4
a. Regression coefficients b. Factors loading
c. Descriptive statistics d. Discriminant Scores
9. What assumption is required for discriminant analysis? CO5K5
a. Multivariate normality b. Homogeneity of regression slopes
c. Linearity of predictors d. No assumption is needed
10. Which statistical test is used to check the significance of discriminant functions? CO5K5
a. Wilk's Lambda b. ANOVA c. Mann-Whitney U test d. Bartlett's test

Part B

5 x 6 = 30

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 11.a. Define MS Excel and state its key uses in data analysis. CO1K1
(or)
- 11.b. Explain how to apply logarithm functions in Excel. CO1K1
- 12.a. Describe the steps to import an Excel dataset into SPSS. CO2K2
(or)
- 12.b. State the importance of Descriptive Statistics in SPSS. CO2K2
- 13.a. Describe the steps to enter data for an Independent Samples T-test in SPSS. CO3K3
(or)
- 13.b. Label the differences between One-Way and Two-Way ANOVA. CO3K3
- 14.a. Define the Chi-square test and explain its application in SPSS, CO4K4
(or)
- 14.b. Interpret the meaning of correlation coefficient (r) values in SPSS output. CO4K4
- 15.a. List the key steps involved in performing factor analysis in SPSS. CO5K5
(or)
- 15.b. Name and explain two key assumptions of discriminant analysis. CO5K5

Part C

5 x 12 = 60

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 16.a. Describe how to perform addition, subtraction, and multiplication in Excel. CO1K1
(or)
- 16.b. Examine how to use Excel for data analysis using arithmetic operations CO1K1
- 17.a. Describe how to calculate and interpret Descriptive Statistics in SPSS. CO2K2
(or)
- 17.b. Discuss the steps to create and interpret a Histogram in SPSS. CO2K2
- 18.a. Explain how to enter data and perform an Independent Samples T-test in SPSS. CO3K3
(or)
- 18.b. Examine how to enter data and estimate a One-Way ANOVA in SPSS. CO3K3
- 19.a. Discuss the estimation of multiple correlation and regression using SPSS, including interpretation. CO4K4
(or)
- 19.b. Compare linear and non-linear regression models and explain how to estimate a non-linear regression equation in SPSS. CO4K4
- 20.a. Explain the process of estimating factor analysis using SPSS, including interpretation of results. CO5K5
(or)
- 20.b. Discuss discriminant analysis in SPSS, including estimation and result interpretation. CO5K5
