



CII Institute of Logistics
PGDSCM & Certificate Programs
Semester-end Examination – June 2009

Research Methodology

Time : Three Hours

Marks : 100

Part A

Answer all questions

(20 x 1 = 20 Marks)

1. Research means
 - a) Collection of data
 - b) Search for Knowledge
 - c) Submission of report
 - d) Analysis of data only
2. Attitude Scaling means "Measurement criteria used to measure individuals' attitudes - (True / False)
3. Statistic means "A characteristic of a sample" - (True / False)
4. A Researcher can collect his required information from
 - a) Primary sources
 - b) Secondary sources
 - c) Both Primary and Secondary sources
 - d) None of the above
5. It is generally agreed among statisticians that a sample is to be considered large if it is size exceeds
 - a) 30
 - b) 20
 - c) 40
 - d) 25
6. Type-I error means:
 - a) Accepting Null Hypothesis when it is false
 - b) Accepting Null Hypothesis when it is True
 - c) Rejecting Null Hypothesis when it is False
 - d) Rejecting Null Hypothesis when it is True
7. Stratified sampling is an example of
8. Assumptions in Non-parametric tests
 - a) Sample observations are independent and variable is continuous.
 - b) Sample observations are dependent and variable is continuous.
 - c) Sample observations are independent and variable is simple.
 - d) Sample observations are dependent and variable is simple.
9. Convenient sampling is an example of
 - a) Random Sampling
 - b) Non-Probability Sampling
 - c) Probability Sampling
 - d) Simple random sampling
10. Analysis of Variance (ANOVA) technique was mainly used inResearch
 - a) Industrial Research
 - b) Business Research
 - c) Agricultural Research
 - d) Applied Research
11. Which one of the following is not a merit of factor analysis?
 - a) Condenses and simplifies multivariate data
 - b) Large factor analyses are economical
 - c) Reveals the latent factors
 - d) Points out hidden relationships among observed data
12. The effect upon the dependant variable is attributed to extraneous variable (True /False)
13. A concept which can take on different quantitative values is called a

- a) Variable
- b) Constant
- c) Parameter
- d) Factor

14. The analysis of time series is done to understand the dynamic conditions for achieving the short term and long term goals of firms (True / False)

15. Those data which are collected afresh and for the first time for a study are called

- a) Primary Data
- b) Secondary Data
- c) Raw Data
- d) First Data

16. A definite plan for obtaining a sample from a given population is called

- a) Research Design
- b) Sample Design
- c) Empirical Research
- d) Systematic Sampling

17. Sampling design are of two types, Probability sampling and non-probability sampling (True /False)

18. The term ----- refers to an investigation in which a factor or variable under test is isolated and its effects measured

- a) Randomization
- b) Control
- c) Experiment
- d) Replication

19. Chi Square test is a

- a) Non-parametric test
- b) Parametric test
- c) ANOVA
- d) Psychometric test

20. In the case of schedule, the identity of the respondent is not known

Part B

Answer any four

(4 x 10 = 40)

- 1) What is Hypothesis? Discuss the need and importance of hypothesis?
- 2) What is a Research Design? Explain importance and functions of a Research Design?
- 3) Discuss the meaning of Scaling Technique. Distinguish between rating scale and attitude scale?
- 4) Write short notes on:
 - a. Observation method
 - b. Discriminant Analysis
 - c. Stratified random sampling
- 5) Explain different methods of data collection. Illustrate your answer with imaginary examples.

Part C

Answer all the four

(4 x 10 = 40)

1. In a sample study about the tea habit in two towns following data was observed in a sample of size 100 each.

Town A: 51% persons were male, 31% were tea drinkers and 19% were male tea drinkers.

Town B: 46% were male, 26% were tea drinkers and 17% were male tea Drinkers.

Is there any association between sex and tea habits? If so, in which town it is greater?
2. A population is divided into three strata so that $N_1=5000$, $N_2=2000$ and $N_3=3000$. Respective standard deviations (SD) are $SD_1=15$, $SD_2=18$ and $SD_3=5$.

How should a sample of size $n = 84$ be allocated to the three strata, if we want optimum allocation using disproportionate sampling design.

- 3 Given is the following correlation Matrix, R, relating to eight variables with Unities in the diagonal space:

	<u>Variables</u>							
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
V	1.000	.709	.204	.081	.626	.113	.155	.774
A	.709	1.000	.051	.089	.581	.098	.083	.652
R	.204	.051	1.000	.671	.123	.689	.582	.072
I	.081	.089	.671	1.000	.022	.798	.613	.111
A	.626	.581	.123	.022	1.000	.047	.201	.724
B	.113	.098	.689	.798	.047	1.000	.081	.120
L	.155	.083	.582	.613	.201	.801	1.000	.152
E	.774	.652	.072	.111	.724	.120	.152	1.000
S								

Using the centroid method of factor analysis, work out the first and second Centroid factors from the above information.

4. The following data relate to the yield of four varieties of wheat each sown on 5 plots. Find whether there is a significant difference between the mean yield of these varieties.

	<u>Varieties</u>			
<u>Plot</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
I	99	103	109	104
II	101	102	103	100
III	103	100	107	103
IV	99	105	97	107
V	98	95	99	106
