CII Institute of Logistics
PGDSCM & Certificate Programs
Semester-end Examination – December 2008

Research Methodology

Time : Three Hours Marks : 100

Part A

Answer all questions *(20 x 1 = 20 Marks)*

1. 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

2. A complete enumeration of all the items in the population is known as
    a. Random Sampling
    b. Census Enquiry
    c. Mailing Questionnaire
    d. Convenient Sampling

3. The effect upon the dependant variable is attributed to extraneous variable (True /False)

4. A concept which can take on different quantitative values is called a
    a. Variable
    b. Constant
    c. Parameter
    d. Factor

5. Which of the following is a way of collecting secondary data?
    a. By observation
    b. By mailing of questionnaires
    c. Through schedules
    d. None of the above

6. 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)

7. 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

8. 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

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

10. 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

11. The population is said to be ---------- if it consists of a fixed number of elements so that it is possible to enumerate it in its totality
    a. Infinite
    b. Finite
    c. Dense
    d. Universal

12. ANOVA is always a Two tailed test (True /False)

13. Which one of the following is not a distribution-free test?
    a. One sample sign test
    b. Two sample sign test
    c. Rank correlation
    d. Z test

14. The standard deviation of sampling distribution of a statistic is known as
    a. Type II Error
    b. Standard Error
    c. Coefficient of Variation
    d. Coefficient of Skewness

15. xx Which of the following is not considered for sample size?
    a. Number of classes proposed
    b. Nature of universe
    c. Statistics of attributes
    d. Nature of study

16. Rejecting a Null Hypothesis when it is true is called
    a. Sampling Error
    b. Alternate Hypothesis
    c. Type II Error
    d. Type I Error

17. Chi Square test is a
    a. Non-parametric test
    b. Parametric test
    c. ANOVA
    d. Psychometric test

18. In the case of schedule, the identity of the respondent is not known (True /False)

19. Stratified sampling is a method of
    a. Simple random sampling
    b. Complex random sampling
    c. Cluster sampling
    d. Area sampling

20. Which one of the following is not true for Research Reports?
    a. Abstract terminology should be avoided
    b. The report must present the logical analysis of the subject matter
    c. Bibliography of sources consulted need not be given
    d. The report must provide ready availability of findings

Part B

Answer any four *(4 x 10 = 40)*

1. Distinguish between
    a. Statistics of attributes and statistics of variables
    b. Simple and complex tabulation
    c. Point estimate and interval estimation
    d. Confidence level and significance level

2. Describe in brief the layout of a research report, covering all relevant points

3. What is research design? Discuss the basis of stratification to be employed in sampling public opinion on inflation.

4. Write short notes on
    a. Semantic differential scale
    b. Multi dimensional scaling
    c. Discriminant Analysis

5. What is a hypothesis? What characteristics it must possess in order to be a good research hypothesis?

6. Discuss the merits and demerits of collection of data through questionnaire

Part C

Answer any four *(4 x 10 = 40)*

1. The values in one sample are 53, 38, 69, 57, 46, 39, 73, 48, 73, 74, 60 and 78. In another sample they are 44, 40, 61, 52, 32, 44, 70, 41, 67, 72, 53 and 72. Test at the 10% level the hypothesis that they come from populations with the same mean. Apply U Test.

2. Set up ANOVA table for the following information relating to three drugs testing to judge the effectiveness in reducing blood pressure for three different groups of people :

Group	Drug		
	X	Y	Z
A	14	10	11
	15	9	11
B	12	7	10
	11	8	11
C	10	11	8
	11	11	7

Answer the following questions taking a significant level of 5% Do the drugs act differently? Are the different groups of people affected differently? Is the interaction term significant?

3. A sample survey indicates that out of 3232 births, 1705 were boys and the rest were girls. Do these figures confirm the hypothesis that the sex ratio is 50:50? Test at 5% level of significance.

4. From a random sample of 36 New Delhi civil service personnel, the mean age and the sample standard deviation were found to be 40 years and 4.5 years respectively. Construct a 95% confidence interval for the mean age of civil servants in New Delhi.

5. The annual incomes of 900 salesmen employed by Hi-Fi Corporation is known to be approximately normally distributed. If the corporation wants to be 95% confident that that the true mean of this year's salemen's incomes does not differ by more than 2% of the last year's mean income of Rs.12,000, what sample size would be required, assuming the population standard deviation to be Rs.1500

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