INDIAN INSTITUTE OF MATERIALS MANAGEMENT

Post Graduate Diploma in Logistics &SCM
Post Graduate Diploma in Materials Management - 2 years
PAPER No.20 (enrolment code –CPM, CPS)
PAPER No. 17 (enrolment code- PMM, PSM,)

June 2023

Research Methodology

Date : 17.06.2023 **Max. Marks: 70**
Time : 2.00 pm to 5.00 pm **Duration : 3 Hrs.**

Instructions:

1. From Part A, contains 4 main questions (with 5 sub-questions) each question carries 1 mark Total of 20 marks
2. From part B answer any5 questions out of 5 questions. Each question carries 10 marks – A total of 50 marks
4. Graph Sheet will be provided if required.
5. Use of standard calculator is permitted.

PART – A (compulsory) **(20 marks)**

Attempt all questions. Each sub-question carries 1 mark.)

Q. 1) Expand the following terms: **[5 marks]**

a) IQ b) ANOVA c)SPSS d) CSO e) CATI

Q. 2) Fill in the blanks: Select appropriate option

a) ---------- research may be conducted for development of existing theory
(i) Conceptual (ii) Descriptive (iii) Basic (iv) Exploratory

b) ------- is the chief motivation in selecting a research problem
(i) Lack of knowledge (ii) Public interest (iii) Financial resources (iv) Personal interest

c) -------- ---------- is the conceptual framework in which research is carried out
(i) Research hypothesis (ii) Synopsis of research (iii) Research paradigm (iv) Research design

d) An advantage of a survey questionnaire is ---------
(i) Wide coverage (ii) Lack of personal contact (iii) Limited response (iv) Lack of uniformity

e) The ---------- test is used for comparing mean of samples when the sample size is less than 30 and the population variance is not known
(i) Z-test (ii) t-test (iii) F-test (iv) Chi-square test

Q. 3) State 'True' or 'False' **[5 marks]**

a) Population can be either finite or infinite.
b) Basic research aims to solve practical problems.
c) A hypothesis that is rejected at 5% level of significance will always be rejected at 1% level of significance also.
d) The data that is coded at the time of data processing is known as post coded data
e) The first step in formulating a research problem is identifying the variables.

Q. 4) Match the following **[5 marks]**

	Column A		**Column B**
1	Median	A	First statement in hypothesis
2	Conference proceedings	B	Data collection
3	Null Hypothesis	C	Mid-value
4	Empirical research	D	Knowledge through observation
5	Questionnaire	E	Primary source

PART B [50 marks]

(Attempt any 5. Each question carries 10 marks)

Q. 5) **(2 x 5 = 10 marks)**

a) Explain the importance of ethics in the context of conducting research and the necessity for following ethical norms. Give an example of what would be considered as ethical/unethical practice in research.

b) Explain the different types of measurement scales used in research and their areas of applications.

Q. 6) **(2 x 5 = 10 marks)**

a) "A literature review gives a theoretical background of the research subject and establishes the relation between what the researcher is proposing to examine and what he has already studied". Explain this statement and discuss the functions served by literature review.

b) Discuss the advantages and disadvantages of Questionnaire method of data collection in research study.

Q. 7) **(2 x 5 = 10 marks)**

a) What do you understand by the term "Dispersion"? Briefly explain the various measures of dispersion and their areas of applications.

b) What do you understand by the term "Sampling Errors" What are the reasons for occurrence of these errors?

Q. 8) **(2 x 5 = 10 marks)**

a) Explain the different methods available for collection of secondary data. In what way the secondary data is useful in research study?

b) Find the coefficient of correlation between advertising expenditure (in 1000 Rs.) and actual sales (in 1000 Rs.) given below:

Advertising Expenditure	3	7	4	2	1	4	1	2
Sales	11	16	9	4	7	6	3	8

Q. 9) **(2 x 5 = 10 marks)**

a) What are Type I and Type II Errors in the testing of Hypotheses? Explain with example.

b) Is it likely that a sample of size 300 whose mean is 12, is a random sample from a large population with mean 12.8 and S.D. 5.2? Use 1% level of significance, Z = 2.58.

Q. 10) **(2 x 5 = 10 marks)**

a) Distinguish between Parametric and Non-Parametric Tests and the assumptions on which they are based. Briefly explain the different types of parametric tests used for hypothesis testing.

b) It is a guess that 20% of passengers in unreserved coaches travel without tickets. In a week, checking the tickets of 256 passengers selected at random from different coaches of different passenger trains, 36 passengers were found without tickets. Would you regard the guess of 20% as true? (Use 5% level of significance, Z = 1.96)

Q. 11) **(2 x 5 = 10 marks)**

a) What do you understand by "Rank Correlation?" Where is it used? Explain the steps involved in calculation of Rank Correlation.

b) A municipal corporation wishes to improve the liking of its residents towards the locality. Research is conducted in which the liking is measured on 11-point scale (1 – do not like the city, 11-very much like the city), and the period of residence is measured in terms of the number of years the respondents have lived in the city. In the pre-test of 12 respondents, the data, as shown in the table, are obtained. **Determine** with help of correlation if the municipal corporation should design new strategies to improve the liking of residents towards the locality.

Respondent	Liking towards the city	Duration of residence
1	6	10
2	9	12
3	8	12
4	3	4
5	10	12
5	4	6
6	5	8
7	2	2
8	11	18
9	9	9
10	10	17
11	2	2

Q. 12) Write Short Notes on **(Any Two)** **(2 x 5 = 10 marks)**

a) Types of Research Reports b) Research design for descriptive studies

c) Regression Analysis d) Chi-Square Test