INDIAN INSTITUTE OF MATERIALS MANAGEMENT

Post Graduate Diploma in Logistics &SCM

Post Graduate Diploma in Materials Management - 2 years

PAPER No.6 (enrolment code –PGMM, PGSM)

Research Methodology

Dec 2025

Date : 15.12.2025 **Max. Marks: 70**
Time : 10.00 a.m. to 1.00 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**
3. Graph Sheet will be provided if required.
4. 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) BMDP b) S-PLUS c) CATI d) ANOVA e) CR

Q. 2) Select appropriate option [5 marks]

a) An interview schedule is a ----------
(i) Sampling method (ii) Data collection method
(iii) Variable (iv) Research objective

b) What is the name of the conceptual framework in which research is carried out?
(i) Research Hypothesis (ii) Synopsis of Research
(iii) Research Paradigm (iv) Research Design

c) The effects of which variable should be minimized, quantified, and/or controlled?
(i) Dependent variable (ii) Extraneous variable
(iii) Chance variable (iv) Independent variable

d) What is **NOT** a function of a hypothesis?
(i) It replaces the research problem
(ii) It provides focus to the research problem and enhances objectivity
(iii) It enables to specifically conclude what is true and what is false
(iv) It ensures only information needed will be collected

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

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

a) Non-parametric tests are distribution-free tests of hypotheses
b) Bar charts and histograms are identical
c) A hypothesis that is rejected at 5% level of significance will always be rejected at 1% level of significance also.
d) Census Reports are examples of Primary Data
e) Population can be either finite or infinite

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

	Column A		Column B
1	Literature review	A	Working mothers
2	Ethics in research	B	Parametric tests
3	Purposive sampling	C	Research ideas
4	Open ended questions	D	Unstructured
5	Inferential analysis	E	Integrity

PART B [50 marks]

(Attempt any 5. Each question carries 10 marks)

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

a) Though there are various forms of research, some characteristics are common to all types of research. Explain this statement and bring out the characteristics that any research should have if it is to be effective.

b) A literature review gives a theoretical background of the research subject and helps to establish a relation between what the researcher is proposing and what he has already studied. In this context explain the main functions of literature reviews.

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

a) A good research design minimizes unfairness and maximizes the trustworthiness of the data collected and analyzed. Explain this statement and bring out the characteristics that a good research design should possess to meet this requirement.

b) What are non-sampling errors? Explain some of reasons for the occurrence of such non-sampling errors.

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

a) Explain why measurement scales are needed in research study. Discuss the characteristics of Nominal scale and Ordinal scale with examples of applications of these scales.

b) Every type of research needs collection of data which should be sufficient, useful, and relevant. As a researcher, what factors would you consider for selecting your data collection method? .

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

a) Explain the features which a well-designed survey questionnaire should possess in order to achieve the objectives of the research.

b) What do you understand by “Correlation Analysis”? Discuss the tools used to study the correlation pattern between variables

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) What do you understand by “Rank Correlation?” Where is it used? Explain with an example.

b) What is Chi-square test? Where it is used? Explain with examples

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

a) What is a research report? Discuss some common types of written research reports.

b) Explain the concept of ANOVA in details, with suitable examples

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

a) Skewness b)Sign Test c) Measures of Dispersion d)Probability sampling

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