



## INDIAN INSTITUTE OF MATERIALS MANAGEMENT

### Post Graduate Diploma in Materials Management

**June 2013**

### Graduate Diploma in Materials Management

#### PAPER No. 13

#### Research Methodology

**Date** : 16.06.2013  
**Time** : 10.00 a.m to 1.00 pm

**Max. Marks** :100  
**Duration** : 3 Hrs.

#### Instructions :

1. Part A: Four Questions (Q 1 to Q 4). All questions are compulsory. Each Question carries 8 marks. **(Total marks 32).**
2. Part B: From Part B answer any three out of 5 questions. Each question carries 16 marks. **(Total marks 48).**
3. Part C: (Compulsory). Case study. **( Total marks 20)**

#### **PART A (compulsory)**

**(1 x 8 = 8 marks)**

**Q.1. Select correct answers from the following** ( Write the full answer of your choice and not only (i), (ii) or (iii) )

(a) Primary Data is :

- (i) data collected first in a research study
- (ii) Census data
- (iii) data collected first time

(b). In simple random sampling every element of the population has

- (i) a known chance
  - (ii) an equal chance
  - (iii) unknown chance
- of being selected in the sample.

(c). If coefficient of correlation is Zero the two variables

- (i) may be correlated
- (ii) are not correlated
- (iii) are correlated

(d) SPSS stands for :

- (i) software package for social sciences
- (ii) Statistical package for social sciences
- (iii) Special package for scientific study.

- (e) In Longitudinal design of study the sample
- (i) is kept the same over time
  - (ii) is changed at the beginning and at the end of study
  - (iii) is changed deliberately
- (e) Analysis of variance is used for examining the difference in the means of
- (i) two populations
  - (ii) more than two populations
  - (iii) any two sets of data
- (f) Editing of a questionnaire is done with the objective of
- (i) Modifying the responses
  - (ii) correcting the answers
  - (iii) increasing accuracy and precision
- (g) Coefficient of determination is
- (i) the degree of decision power
  - (ii) square of the coefficient of correlation
  - (iii) square of the coefficient of variation
- (h) Conjoint analysis attempts to determine
- (i) the relative importance of salient attributes and utilities
  - (ii) the choices of consumers
  - (iii) the best cost price of a product

**Q.2. Match the following in correct order :**

**(1 x 8 = 8 marks)**

<b>A</b>	<b>B</b>
Range	Descriptive Research
Test consisting of pictures	Exploratory Research
Harmonic Mean	Random Numbers
Conclusive research	structured design
Open ended questions	Dispersion
Normal Distribution	Testing of Hypotheses
Probability Sampling	Average of reciprocals
Causal Research	Projective techniques

**Q.3. Complete the statements :****(1 x 8 = 8 marks)**

- (i) Complete enumeration of all elements of a population is called \_\_\_\_\_
- (ii) In Probability sampling each and every element of the population has a \_\_\_\_\_ chance of being selected in the sample.
- (iii) A hypothesis a \_\_\_\_\_ that may or may not be true.
- (iv) A variable is anything which can take on \_\_\_\_\_ values.
- (v) An exploratory study is undertaken when much is \_\_\_\_\_ known about the problem
- (vi) A focus group consists of about 8 to 10 members with a \_\_\_\_\_ leading the discussion.
- (vii) Variation in the dependent variable is influenced by changes in the \_\_\_\_\_ variable.
- (viii) When two variables X and Y move in the opposite directions the correlation between them is \_\_\_\_\_

**Q.4. Write true or false against the following statements:****(1 x 8 = 8 marks)**

- (i) Type I error is accepting a false hypothesis.
- (ii) Under stratified sampling the population is divided into heterogeneous groups.
- (iii) Binomial distribution is applicable to trials which have two mutually exclusive outcomes.
- (iv) Case study helps to solve a problem similar to the one analyzed by some other organization in a similar situation.
- (v) A factorial experimental design enables to test the effect of two or more independent variables on the dependent variable.
- (vi) To run a business accurate and timely information is needed.
- (vii) For unstructured interview the a well planned sequence of questions only is used.
- (viii) Closed-ended questions help in getting a broad idea about a situation

## PART B

**(Answer any three out of five. Each question carries 16 marks)**

Q.5. The interest rates on term deposits of less than and up to 3 years period and the amounts of fixed deposits with the branch of a bank for the last eight quarters of 2011-12 are detailed as below :

Rates of interest p.a.	8%	9%	7%	12%	12%	8%	9%	7%
Fixed deposits in crores	15	16	14	17	16	15	14	13

Is there a correlation between the interest rates and deposits ? Find the coefficient of correlation.

Q.6. A typing test in computer Microsoft word was given to a candidate. It was found that she made on the average 12 mistakes per page with standard deviation 4 in the 100 pages typed by her. Test the hypothesis that she would make on the average not less than 10 mistakes per page in typing at the same speed. (Level of significance is 5 %.)

Q.7. **Distinguish between** (any two )

- (i). Experimental and control group in experimental study
- (ii). Research Methods and Research Methodology
- (iii). Cluster sampling and Stratified sampling

Q.8. **Write short notes on any two :**

- (i) Research Report
- (ii) Testing of Hypothesis
- (iii) Data collection Methods

Q.9. Define Research Design. Describe briefly the various research designs.

What is the role of extraneous and chance variables in experimental research design ?

**Part C ( Compulsory)**

20 marks

Q.10. Because of economic slow down and to keep wage bills under check some Indian companies have introduced Variable Pay Scheme ( VPS ). Under this scheme the salary packages are *more* linked to the actual performance of an individual or the over all performance of the company or both. The variable components may include bonus, medical facilities, tour and travel etc.

To increase the sales and profit margins Mr. A.K.Ghosh the C.E.O of a pharmaceutical company is thinking of moving to VPS in his company for all the senior level, middle level and junior level managers. The VPS had been a great success in some companies .But he would like to try the idea before implementing it. He wants to be quite assured that the idea would successfully work in *his* company.

**Questions :**

1. Should the company right away introduce VPS for all its managers or seek the help of a reliable researcher ?
2. For research, would it be desirable to use " *before-after*" experimental design ?
3. What other Research method would you suggest. Give an outline only.

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