

**MAULANA AZAD NATIONAL URDU UNIVERSITY**

**Programme: PhD (CS)**

**Course Work Examination December 2017**

**PHCS101CCT- Research Methodology**

**Time: 3 hours**

**Max. Marks: 70**

**Instructions:**

This Question Paper consists of three parts: Part- A, Part-B and Part-C. Attempt all Parts. **Part-A** contains 10 compulsory questions of very short answer type questions. Answers to be given in one word/sentence. Answer all questions. Each question carries 01 marks.

**(10 x 1 = 10 Marks)**

**Part-B** contains eight questions, of which students are supposed to answer any five questions. Answer each question in 200 words. Each question carries 06 marks.

**(5 x 6 = 30 Marks)**

**Part-C** contains five questions, of which students are supposed to answer any three questions. Answer each question in 500 words. Each question carries 10 marks.

**(3 x 10 = 30 Marks)**

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**[PART-A]**

**Q1.**

- i. Write the basic elements of scientific methods?
- ii. Write any three benefits of interviewing as a technique of data collection.
- iii. Define the purpose of formulating research hypothesis?
- iv. While developing a sample design for research problem, what parameters should be taken into consideration by a researcher?
- v. Why do we test Hypothesis?
- vi. List out any two reasons of error in measurement?
- vii. Distinguish between statistic and parameter
- viii. Probability sampling is generally preferred in comparison to non-probability sampling why?
- ix. Differentiate between confidence level and significance level
- x. Define sampling of attributes and sampling of variables

**[PART-B]**

2. Validity is more critical to measurement than reliability. Justify your answer with example.
3. Explain the meaning and significance of the concept of "Standard Error" in sampling analysis.
4. Differentiate between concept development and concept specification?

**P.T.O.**

5. Categorize the following given data according to nominal, ordinal, interval or ratio data?
  - (a) Temperatures measured on the Kelvin scale.
  - (b) Military ranks.
  - (c) Social security numbers.
  - (d) Number of passengers on buses from Delhi to Hyderabad.
6. Differentiate between descriptive statistics and inferential statistics?
7. Distinguish between:
  - (a) Restricted and unrestricted sampling
  - (b) Convenience and purposive sampling
  - (c) Cluster and area sampling
8. What is multivariate analysis? Explain how it differs from bivariate analysis.
9. Under what circumstances would you recommend?
  - (a) A probability sample?
  - (b) A non-probability sample?
  - (c) A stratified sample?

**[PART-C]**

10. Discuss different methods of collecting data. Describe the most suitable for conducting enquiry regarding family welfare programme in India? Explain its merits and demerits.
11. Why tabulation is considered essential in a research study? Narrate the characteristics of a good table.
12. Describe the important statistical measures often used to summarise the survey/research data.
13. A population is divided into three strata so that  $N_1 = 5000$ ,  $N_2 = 2000$  and  $N_3 = 3000$ .  
Respective standard deviations are:  $\sigma_1 = 15$ ,  $\sigma_2 = 18$  and  $\sigma_3 = 5$ .  
How should a sample of size  $n = 84$  be allocated to the three strata, if we want optimum allocation using disproportionate sampling design?
14. Describe the important measures of central tendency pointing out the situation when one measure is considered relatively appropriate in comparison to other measures.