

**Avinashilingam Institute for Home Science and Higher Education for Women
Coimbatore – 641 043**

Master's Degree Examination – November 2018

III Semester

Class: II PG

Major: Chemistry

Max. Marks: 60

Time: 3 Hours

17MCHC15 Research Methodology

Part – A

10 x ½ = 5 Marks

Choose the correct answer

1. ----- research is research conducted for a problem that has not been clearly defined
a) Applied b) Action c) Basic d) Exploratory
2. ----- must have excellent written and verbal communication skills
a) Analyser b) Researcher c) Investigator d) Scholar
3. The standard deviation is represented by -----
a) μ b) σ c) β d) φ
4. ----- is a measure that is used to quantify the amount of variation or dispersion of a set of data values
a) Mean b) Average c) Standard deviation d) Range
5. ----- sampling is a part of the sampling technique in which each sample has an equal probability of being chosen
a) Stratified b) Random c) Variable d) Reference
6. A statistical method assessing the goodness of fit between a set of observed values and those expected theoretically
a) T test b) Q test c) Chi square test d) F test
7. A statistical method in which the variation in a set of observations is divided into distinct components
a) ANOVA b) SPSS c) ISIS d) Q test
8. Which of the following is a two dimensional diagram?
a) Bar diagram b) Pie diagram c) Line graph d) Spherical diagram
9. India's share of research papers in the journal of American Chemical Society is
a) 15% b) 25% c) 35% d) Below 1%
10. What is ISIS draw?
a) Reference b) Program c) Software d) Function

Part – B

5 x 4 = 20 Marks

Answer ALL questions

Each answer should not exceed 200 words or one page

11. (a) Explain the points to be kept in mind while choosing a research problem.
(OR)
(b) Describe the qualities of a good researcher.
12. (a) What are the types of sampling? Explain.
(OR)
(b) Discuss the following:
i) Types of variables ii) Essentials of good sampling
13. (a) Discuss the 't' test with example.
(OR)
(b) Write a note on: i) Chi square test ii) Standard deviation
14. (a) Explain the components of a good research report.
(OR)
(b) Discuss the current status of research in chemistry in India.
15. (a) Enumerate the uses of technology in research.
(OR)
(b) What are the various funding agencies in India.

Part – C

5 x 7 = 35 Marks

Answer ALL questions

Each answer should not exceed 600 words or three pages

16. (a) Give a brief account on the different types of research.
(OR)
(b) Write notes on: i) Characteristics of research
ii) Criteria of good research
17. (a) i) Indicate how the references are classified.
ii) Distinguish between primary and secondary data.
(OR)
(b) i) Discuss the formulation of hypotheses.
ii) Write note on various methods of sampling with suitable examples.
18. (a) Discuss the applications of 't' test and explain the characteristics of 'chi square' test.
(OR)
(b) i) Explain the principle and types of ANOVA.
ii) Write a note on correlation techniques.
19. (a) Discuss the following: i) Preparation of synopsis of a research.
ii) One and Two dimensional diagrams
(OR)
(b) i) Explain the steps involved in the tabulation of data.
ii) Discuss the scope of research in higher education.
20. (a) Discuss the role of computer packages for data analysis.
(OR)
(b) Discuss the various funding sources available for scientific research in India.