Ph.D Course Work Examinations, July-2023

CHEMISTRY

Course-I: Research Methodology

Time: 3 Hours   **Max.Marks: 70**

Instructions: All sections are compulsory

1. Answer any **Seven** questions of the following: 7X2=14
   a) What is conflict of interest in scientific publications?
   b) What is Science citation index?
   c) Differentiate between periodicals and monographs.
   d) What are patents?
   e) List the good laboratory practices.
   f) Give the principle of distillation.
   g) Give the significance of F test.
   h) What are determinate errors?

2. a) What is patent? Explain its significance.
   b) Briefly explain different types of research.
   c) Distinguish between primary and secondary sources of literature with example.
                                                           (4+5+5)

   Or
   c) Write a note on selection of research problem.

3. a) Describe the various steps in the preparation of thesis.
   b) Discuss the Research manuscript preparation of Full length research paper.
   c) What is a short communication? Mention its importance and how it is prepared?
                                                         (4+5+5)

   Or
   c) Describe the procedure in the preparation of poster presentation.

4. a) Write a note on handling of corrosive and explosive chemicals and reagents.
   b) Mention the difference between the principle and methodology of sublimation and
      crystallization.   (7+7)

   Or
   b) Discuss the general methods of isolation and purification of chemicals.

5. a) Classify the errors and explain the distribution of random errors.
   b) For titrating 1ml of alkaline solution with the help of micro burette, the volume of
      titrant used are 9.9, 9.9, 9.9, 9.9, 9.9, 10.0 and 10.20ml. Calculate the Mean,
      Median, Standard Deviation and Coefficient of Variance.
   c) What is Q test? Mention its significance with an example.   (5+4+5)

   Or
   c) Explain the application of linear regression in the construction of straight line between
      the two variables.

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