

**M.Phil (Chemistry) Examination**  
**Paper-I : Research Methodology**  
**May-2017**

**Time : 3 Hours]**

**[Max. Marks : 70**

**Q1. Answer the following:**

**14 marks**

(a) Compare the two techniques: distillation and solvent extraction in terms of principle and application.

OR

(a) Discuss the safety and precautions to be observed for reactive reagents and toxic chemicals.

(b) Explain the basic laboratory procedure like (i) crystallization and (ii) Drying.

OR

(b) Write short notes on (i) Accuracy and Precision. (ii) pH and Buffer solutions.

**Q2. Answer the following:**

**14 marks**

(a) Describe the characteristic and give the utility of word processor.

OR

(a) Discuss the utility of spreadsheet and describe the different version.

(b) Give the comparison between Internet and World Wide Web.

OR

(b) Describe the internet resource for chemistry such as science direct for scientific data.

**Q3. Answer the following:**

**14 marks**

(a) Describe the format of writing; (i) References and (ii) Bibliography..

OR

(a) Describe the important criteria for effective poster and oral presentation.

(b) Describe the format of research proposal as well as research report.

OR

(b) What is the necessity for literature survey and review in research activity?

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**Q4.** Answer the following:

**14 marks**

(a) Describe the various aspects for selecting the research problem.

OR

(a) Explain the hypothesis testing with the help of a flow diagram.

(b) Discuss the types of hypothesis with appropriate examples.

OR

(b) Highlight the errors encountered while selecting a research problem.

**Q5.** Write brief note on *any two* of the followings: (7 mark each)

**14 marks**

a) Necessary measures to be taken while using explosive compounds.

b) Internet resource for chemistry (STN).

c) Important aspects of scientific writing.

d) Sources of research problems.