



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**M.Sc. DEGREE EXAMINATION – CHEMISTRY**

**THIRD SEMESTER – NOVEMBER 2017**

**16PCH3MC03 – SCIENTIFIC RESEARCH METHODOLOGY AND COMMUNICATIONS**

Date: 06-11-2017

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

**Part-A**

**Answer ALL questions.**

**(10 × 2 = 20)**

1. Define research.
2. What is a scientific method?
3. Cite the two principal databases of CAs.
4. What do you mean by *thematic issues* in Chemical reviews?
5. Mention the difference between book sets and book series.
6. How is the technical reporting done to the secondary audiences?
7. What are tautology and superfluous phrases? How can they be corrected?
8. Why is the thesis writing done in passive voice?
9. Write the expansion and meaning of the given abbreviations. i.e., and op. cit.
10. What is type of verb used in the results and discussion chapter of a thesis?

**Part-B**

**Answer any EIGHT questions.**

**(8 × 5 = 40)**

11. Outline the steps involved in a scientific method.
12. Elaborate the qualitative research.
13. Write a note on testing hypothesis and error handling.
14. Give an account of *peer review* process.
15. Demonstrate the role of *reviews* in chemical literature.
16. What are index names? How are they developed? Cite few examples.
17. Classify the types of outlining. Explain each one with specific example.
18. How is a laboratory notebook maintained? Mention its importance.
19. Explain the referencing styles used in RSC publications with respect to journals and books.
20. How are tables and graphs represented in a thesis individually and as a part of the text?
21. Describe in detail the art of thesis writing.
22. How are the budget and the time framework of a project proposal planned?

**Part-C**

**Answer any FOUR questions.**

**(4 × 10 = 40)**

- 23 a. Outline the general methodology used for assessment and evaluation. (7)  
b. List the information associated with *Current Chemical Reactions*. (3)
24. Illustrate the characteristics of research.
- 25 a. How do the following indexing journals contribute to the chemical literature? Explain.  
a) *Index chemicus* b) *Current Contents*.  
b. Why is plagiarism regarded as a serious offence? Suggest the measures to avoid it. (5+5)
- 26 a. What are the needs of technical reporting?  
b. How to overcome the usage of imprecise and overcomplex words in a report? (5+5)
- 27 a. Describe the various modes of use of semicolon and comma in a technical report.  
b. Rewrite the following in your own words.  
A mixture of  $\text{RuCl}_3 \cdot 3\text{H}_2\text{O}$  (0.12 g), 1,10-phenanthroline (1 g) and LiCl (0.17 g) dissolved in dry DMF (10 mL) was refluxed for 6 h under nitrogen atmosphere and cooled to room temperature. To which acetone (25 mL) was added, and kept at 0 °C overnight. The dark green solid that separated out was filtered, washed with cold water and dried in a vacuum desiccator. The yield was 72%.
28. Write a project proposal (not more than 2 pages) for 1 year funding on any one of the following topics.  
Child labour; improving water bodies; solar power; higher education; health issues and green India.

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