

322604

May, 2023

**B. Sc. (Chemistry) VI Semester
Research Methodology for Chemistry (DECC-603)**

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) What is the purpose of abstracts in journals? (1.5)
(b) Define H-index? (1.5)
(c) What is the difference between Scirus and Google Scholar as search engines? (1.5)
(d) Briefly describe some safe working procedures in a laboratory? (1.5)
(e) What is the purpose of writing literature surveys and reviews? (1.5)
(f) Discuss Analysis of Variance (ANOVA). (1.5)

- (g) How can plagiarism be avoided when writing scientific papers? (1.5)
- (h) What is the purpose of statistical tests in data analysis? (1.5)
- (i) What are the 4 basic types of electronic components? (1.5)
- (j) What is incineration of hazardous chemicals? (1.5)

PART-B

- 2. (a) What are primary, secondary, and tertiary sources of information in literature survey? Explain in detail. (10)
- (b) What is an impact factor and how is it calculated? (5)
- 3. (a) How can the internet be used for finding and citing published information in literature survey? (5)
- (b) What are the essential components of a scientific paper and how should they be presented? (10)
- 4. (a) How can ethics be integrated into scientific writing? (5)
- (b) What are the important considerations in organizing a poster display for scientific research? (5)
- (c) Discuss some examples of web resources available for literature survey? (5)

- 5. (a) What are the methods for identifying, verifying and segregating laboratory waste? (8)
- (b) How should hazardous chemicals be safely stored and used in a laboratory? (7)
- 6. (a) Explain correlation and regression analysis and their applications. (6)
- (b) What are SI units and how are they used in scientific measurement? (5)
- (c) What is Chemometrics and how is it used in data analysis? (4)
- 7. (a) Give some basic aspects of multiple linear regression analysis. (4)
- (b) What are operational amplifiers and how are they used in electrochemical instruments? (6)
- (c) How do you choose and use statistical tests in data analysis? (5)