

**C. ABDUL HAKEEM COLLEGE (AUTONOMOUS),
MELVISHARAM - 632 509.
SEMESTER EXAMINATIONS, NOVEMBER - 2018**

**M.Sc., CHEMISTRY
SEMESTER III
P15ECH301 – SCIENTIFIC RESEARCH METHODOLOGY (ELECTIVE)**

Time: Three Hours

Maximum: 75 Marks

SECTION - A (5 X 6 = 30 Marks)

Answer **ALL** Questions.

1. a) Illustrate the techniques involved in defining a research problem.

(Or)

b) What are the aims and objectives of a good research?

2. a) Explain Soxhlet extraction.

(Or)

b) Write short notes on vacuum sublimation.

3. a) Give the importance of normal distribution curve.

(Or)

b) Write a note on precision and accuracy.

4. a) Apply the “Q” test to the following data sets to determine whether the outlying result should be retained (or) rejected at the 95 % confidence level [Q critical value for 4 measurements=0.829]

41.27, 41.61, 41.84, 41.70.

(Or)

b) Write a note on student's t-test.

5. a) State the importance of tables and figures in thesis.

(Or)

b) Specify the significance of bibliography.

SECTION - B (3 X 15 = 45 Marks)

Answer **ANY THREE** Questions.

6. a) Write a note on citation index for scientific papers and journals.

b) Give an account on primary and secondary sources.

7. a) What are the safety and precautionary measures to be taken while handling hazardous chemicals?

b) Write a note on crystallization.

8. Explain the different types and sources of errors and enumerate the methods to minimize such type of errors.

9. Write a note on.

i. Significant figures

ii. Least square analysis

iii. F-test.

10. What are the steps that the researchers should take while editing and evaluating the final draft of thesis? Explain.
