

Pre. Ph.D. Course Work (2017 Course) : SUMMER - 2018
(Common For Chemistry / Microbiology / Biotechnology)

SUBJECT : PAPER – I : RESEARCH METHODOLOGY & ICT FOR RESEARCH
(CHEMISTRY)/(MICROBIOLOGY)/(BIOTECHNOLOGY)

Day: Monday
Date : 25/06/2018

S-2018-4738

Time : 10.00 AM TO 01.00 PM
Max. Marks : 100

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.

- Q.1** Attempt **ANY FOUR** of the following: (20)
- a) What is IMRAD? Explain the salient features of each component.
 - b) Explain the terms and their significance with reference to correlation coefficient, standard deviation and coefficient of variation.
 - c) How are computers used as a tool in research? Explain giving examples.
 - d) Define plagiarism? Write in brief about consequences of plagiarism.
 - e) Write a note on oral presentation.
- Q.2** Attempt **ANY FOUR** of the following: (20)
- a) What is data? Explain mean, mode and median with examples.
 - b) Write a note on graphical representation and histogram.
 - c) How do you define a research problem? Give three examples to illustrate your answer.
 - d) Distinguish between simple and complex tabulation.
 - e) Explain the significance of a research report and narrate the various steps involved in writing such a report.
- Q.3** Attempt **ANY FOUR** of the following: (20)
- a) What is hypothesis? Explain any one form of hypothesis.
 - b) Describe in brief about different types of scientific documents.
 - c) What is intellectual property? Why there is need of promoting and protecting intellectual property.
 - d) Write a note on Literature survey in research.
 - e) Discuss importance of writing acknowledgement in the manuscript.
- Q.4** Attempt **ANY FOUR** of the following: (20)
- a) What do you understand by the term patent?
 - b) Why tabulation is considered essential in a research study? Narrate the characteristics of a good table.
 - c) What do you mean by multivariate analysis? Explain their significance in context of research studies.
 - d) Write a note on documentation in the context of a research report.
 - e) Discuss different methods of patent application.
- Q.5** Attempt **ANY FOUR** of the following: (20)
- a) State the basic assumptions of the analysis of variance.
 - b) Write a note on importance of Linear and non-Linear regression analysis in research.
 - c) Write a note on bibliography and its importance in context of research report.
 - d) Discuss about composition and writing a patent.
 - e) List the precautions while using the secondary data.