

SCHOOL OF CHEMICAL & LIFE SCIENCES
PH.D. COURSE WORK EXAMINATION (OCTOBER 2023)
Title of course paper: Research Methodology (Compulsory)

Time: Three hours**Maximum Marks: 75**

(Write your Roll No. at the top immediately on receipt of this question paper)

Answer ALL questions. All parts of a question must be answered in continuation. Start answering each question on a new page. Cite examples and draw labeled diagrams wherever applicable.

Q1. Very Short Answer Type (not more than half a page)**10×1.5=15**

- a. What is difference between ISSN and ISBN?
- b. Give name of one software use for arranging and managing references cited in a manuscript?
- c. What is full form of NLM?
- d. What is degree of freedom in statistics?
- e. Write full form of PCT? (Hint – related to patents)
- f. Define salami publications.
- g. What is i10 of an author/researcher?
- h. This year's Nobel Prize in Chemistry was won by the scientists on their research work related to which subject matter?
- i. Define Open Access policy.
- j. National Science Day is celebrated on which day?

Q2. Short Note Type; attempt any four (04) (not more than two pages)**4×5=20**

- a. Write on attributes of quantitative research with examples in the field of agricultural research.
- b. What is importance of 'controls' in biomedical research?
- c. What conflict of interest? List types of conflicts in research?
- d. Write a note on role of the Institutional Animal Ethics in research.
- e. What is 'null hypothesis? What is importance in research?
- f. Write a note on importance of bioinformatics and chemoinformatics.

Q3. Long Answer Type; attempt any two (02) (no limit of pages)**2×20=40**

- a. Describe various types of ethics. What is code of ethics? Give an example of code of ethics.
- b. Give an account of various types of presentations in conferences. What is the value of presentations at conferences/symposiums/seminars?
- c. Describe adverse impact of biotechnology on environment with suitable examples.
- d. Discuss concept of variables. What is meant by standard deviation and standard error in presentation of scientific data?

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