Seat No.

M.Sc. (Part - I) (Semester - I) (NEP) Examination, December - 2023
CHEMISTRY
RM-CH-106 : Research Methodology
Sub. Code : 90925

Day and Date : Saturday, 02- 12 - 2023   Total Marks : 80
Time : 10.30 a.m. to 1.30 p.m.

Instructions :
1) Question No 1 is compulsory.
2) Attempt any two questions from section-I & two questions from section-II.
3) Figures to the right indicate full marks.

Q1) a) Keyboard is an example of an output device. (True/False)   [1]

b) Executing instructions is the main function of the CPU. (True/False) [1]

c) Central Processing Unit is the full form of CPU. (True False)   [1]

d) Define absolute error   [1]

e) What is i-10 index?   [1]

f) Define Significant figures.   [1]

g) Compare between qualitative and quantitative research.   [1]

h) List any 04 SCI journals.   [1]

i) List any method for minimization of error.   [1]

j) What is precision'?   [1]

k) What is ISSN. ISBN. DOI?   [1]

l) What is the use of scifinder?   [1]

m) What is the h-index of the author?   [1]

n) Which type of error is difficult to detect?   [1]

o) What is equation of straight line graph?   [1]

p) Microsoft Power Point is presentation software. (True/False)   [1]

P.T.O.

SECTION-I

Q2) a) Discuss in detail the methods for minimization of errors [8]

    b) Explain following terms [4]

        i) Mean

        ii) Median

        iii) Standard deviation

    c) Explain Significant figure. [4]

Q3) a) What is plagiarism? As a researcher, what care you should take to avoid plagiarism? [8]

    b) Write about the research methodologies for design and implementation of research plan. [4]

    c) What is citation index and describe i 10 and H index. [4]

Q4) a) Two analytes gave the following observations [8]

    Analyst 1.

        i) 49.01

        ii) 49.21

        iii) 49.08

    Analyst 2

        i) 49.40

        ii) 49.42

        iii) 49.44

    Calculate precision and accuracy of both analysts. Which analyst is more precise and which one is more accurate?

    b) Explain Accuracy and precision in details. [4]

    c) Explain in detail features of MS Excel. [4]

SECTION-II

Q5) a) Give detailed account of writing a scientific review and explain the significance of review articles in research work. [8]

b) Elaborate the following [4]
  i) Sources of literature
  ii) Compare between Conference and Workshop

c) Explain [4]
  i) Hypothesis
  ii) Formulating a research problem

Q6) a) Discuss in brief types of graphs used in research. [8]

b) What are the different graphical methods used in research? Explain. [4]

c) Explain types of line graph. [4]

Q7) Write short notes on any four of the following: [16]
  a) Computer Applications in Research
  b) Detection limit
  c) Bibliographic Tools
  d) Research paper
  e) What are the different parts of the computer and its uses