Duration : 2 ½ Hrs. **[Max. Marks : 60]**

N. B. : (1) All questions are Compulsory.
(2) Figure to the right indicate full marks.

Q. 1 A) Attempt **any two** of the following: **8**

i Write a note on types of web resources.

ii Explain the terms, a) Citation index b) Impact factor.

iii Give main features of e-journals. Gives its advantages and disadvantages.

iv What is an Abstract? What are the characteristics of an abstract?

B) Attempt **any one** of the following: **4**

i Discuss importance of Google scholar, Chem Industry, and ChemSpider in research.

ii What are library resources? Give Selected Internet Resources for Chemistry.

Q, 2 A) Attempt **any two** of the following: **8**

i Define Chemometrics. Explain the chemometrics process in brief.

ii Define any four terms from the following: Mean, Median, Mode, Range, Variance.

iii Explain in brief the limitations of scientific method.

iv What is SI system? Give any four SI units commonly used by chemists.

B) Attempt **any one** of the following: **4**

i Define variable and explain different types of variables.

ii What is weighted least square regression? Give any two disadvantages of weighted least square regression.

Q. 3 A) Attempt **any two** of the following: **8**

i What are variables in research? Differentiate between dependent and independent variables.

ii Write in brief general structure of research paper.

iii Describe the language issues in research paper.

iv What are simple rules for making effective oral Presentation?

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	B)	Attempt **any one** of the following:	**4**
	i	What is plagiarism and how can it be avoided in research paper?	
	ii	State the guidelines for writing project report?	
Q. 4	**A)**	Attempt **any two** of the following:	**8**
	i	Write a note on segregation of cytotoxic waste.	
	ii	What is chemical waste? Explain the recycling of laboratory chemicals.	
	iii	Write a note on safe uses of flammable and explosive chemicals.	
	iv	Give any four steps of emergency response procedures.	
	B)	Attempt **any one** of the following:	**4**
	i	Write any four general requirements of chemical protective clothing.	
	ii	Define Incineration. Write a note on hazardous waste incineration.	
Q. 5		Attempt **any four** of the following:	**12**
	A)	**i**) Give any two citation tools.	
		ii) Define an Abstract.	
		iii) Gives two examples of primary sources.	
	B)	Gives in brief about citation styles in research.	
	C)	Explain the advantages of weighted least square regression.	
	D)	Define: Accuracy, Precision, Standard deviation.	
	E)	What is a Scientific poster? Give their advantages.	
	F)	Gives guidelines for writing practical project.	
	G)	Discuss the guidelines for materials that should never be disposed of through the sanitary sewer system.	
	H)	Write a note on laboratory ventilations.	

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