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Mid-Term Examinations – November 2021

Programme : **B.Tech. Computer Science and Engineering with Semester : Fall 2021-22**
(Specialization in Cyber security and Digital Forensics)
Course : **Forensic Chemistry and Applications** Code : **CHY1007**
Faculty : **Dr. Saurabh Bhargava** Slot/ Class No. : **B21+D11+D12 /0280**
Time : **1 ½ hours** Max. Marks : **50**

Answer all the Questions

Q.No.	Sub. Sec.	Question Description	Marks
1	(a)	Compute and express each answer with the proper number of significant figures, rounding as necessary. I. $8.78 \times (0.0500 \div 0.478) = ?$ II. $38.7 \times 95.930 \times 1.792 = ?$ III. $8119 \times 0.000023 = ?$ IV. $(28.7 - 0.0483) \div 3,310 = ?$	5
	(b)	With appropriate example, differentiate between qualitative and quantitative forensic analyses. Justify the need for quantitative analysis in forensic scenario.	5
2		Following two items has been sent to forensic lab for examination- • Item 1: A half empty bottle with some liquid having alcoholic smell. • Item 2: Some plant leaves suspected to be from cannabis plant. Draw the flow charts depicting the scheme of forensic analysis specific for both items.	10
3		'Column of a liquid chromatogram is the heart of the instrument'- justify this phrase with appropriate examples of different types of columns used different types of analyses.	10
4		Draw a well labelled diagram of instrumentation of SEM-EDX, and explain the application of SEM-EDX in Gun Shot Residue analysis.	10
5		Apply Thin Layer Chromatography (TLC) knowledge for analysis of questioned paint sample retrieved from road accident case. Evaluate, whether TLC is relevant in establishing the origin of paint sample to s specific make and model of automobile.	10

