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SVIS N 309 A-15
B.Sc.VIth Semester Degree Examination
Chemistry
Paper : 6.1
(New)

Time : 3 Hours Maximum Marks : 80

Instructions to Candidates: *Answer all* ***three*** *sections.*

SECTION - A

I. Answer the following questions: **(15 × 1 = 15)**

1. What is precision?
2. Define standard deviation ?
3. Name two types of crucibles ?
4. What is co-precipitation?
5. What is median
6. Give an example of alkaloid
7. What are enzymes?
8. Write the structural formula of menthol.
9. What are proteins
10. Give an example of dipeptide.
11. Which type of molecules give vibrational spectra?
12. What is meant by polarizability?
13. What is Raman effect?
14. What is electromagnetic radiation?
15. What is meant by selection rule?

SECTION - B

II. Answer any **FIVE** of the following questions: **(5 × 5 = 25)**

16. What are the general steps used in the gravimetric analysis.
17. Discuss the terms used to describe the precision.
18. Give the synthesis of glycylalanine.
19. Discuss the factors affecting the rate of enzyme catalysis.
20. Mention different class of terpenes with examples.
21. Give the qualitative description of non-rigid rotator.
22. Discuss the isotopic effect in vibrational spectrum.

SECTION - C

III. Answer any **FOUR** of the following questions: **(4 × 10 = 40)**

23. a) What are the points and rules to be kept in mind, while reporting the analytical data. **(6)**

    b) Calculate the mean and the standard deviation of the following set of analytical results. 15.67, 15.69 and 16.03 **(4)**

24. a) What are the ageing factors which effect the gravimetric precipitation? **(6)**

    b) Write a note on crucible. **(4)**

25. a) Elucidate the structure of Nicotine. **(6)**

    b) Give the synthesis of thyroxin. **(4)**

26. a) Discuss the primary and secondary structure of proteins. **(6)**

    b) Explain the methods for the isolation of terpenes. **(4)**

27. a) What is radiolysis? Discuss the mechanism involved in the radiolysis of water vapour. **(6)**

    b) Write a note on Fricke's dosimeter. **(4)**

28. a) Explain energy levels of simple harmonic oscillator and selection rule in IR spectrum. **(6)**

    b) What is the moment of inertia of a diatomic molecule whose inter nuclear distance is 150 pm and the reduced mass is 1.5×10^{-27} kg.
