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**SVIS-N 309 A-2K13**

**B.Sc. VIth Semester Degree Examination**

**Chemistry**

**Paper - 6.1**

**(New)**

Time : 3 Hours

Maximum Marks : 80

**Instructions to Candidates:**

*Answer all the three sections.*

**Section - A**

**I. Answer the following questions.**

**(1×15=15)**

- 1) What is precision?
- 2) What is standard deviation?
- 3) What is co-precipitation ?
- 4) What is median?
- 5) Define errors.
- 6) Give two examples of alkaloids.
- 7) Write the structure of camphor
- 8) Give two examples of co-enzymes.
- 9) Name two hormone secreting glands.
- 10) What are proteins?
- 11) What are selection rule for rotational and vibrational spectra?
- 12) What is Born-oppenheimer approximation?
- 13) What types of molecules give vibrational spectra?
- 14) What is radiolysis?
- 15) Give an expression for zero point energy of a diatomic SHO of vibrational frequency.

**Section - B**

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

- 16) Describe different types of errors.
- 17) Write a note on analytical chemistry.
- 18) Discuss the classification of hormones with examples.
- 19) Give the Synthesis of vitamin - C.
- 20) Give the synthesis of citral.
- 21) Give the applications of I.R. Spectrum in the calculation of moment of inertia bond length and force constant.
- 22) Discuss briefly the mechanism involved in the radiolysis of water vapour.

**Section - C**

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

- 23) a) Explain the difference between absolute error and relative error. (6)  
b) Write a note on significant figures. (4)
  - 24) a) Describe various steps involved in a gravimetric techniques. (6)  
b) Write a general rules of conditions of precipitation. (4)
  - 25) a) What is Isoprene rule? Mention different class of terperpenes with examples. (6)  
b) Give the Biological importance of Oxitocine and insulin. (4)
  - 26) a) Elucidate the structure of Nicotine. (6)  
b) Give four characteristic property of enzymes. (4)
  - 27) a) What is Raman Spectra? Explain pure rotational raman spectrum for diatomic molecules. (6)  
b) What is meant by radiation dosimetry? Explain the term rad and Gray. (4)
  - 28) a) Using energy level expression and appropriate selection rule draw an energy level diagram and spectral transition for a vibrational spectra of a diatomic molecule taking it as simple harmonic oscillator. (6)  
b) Write a note on ceric sulphate dosimeter. (4)
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