



**B.Sc. V Semester Degree Examination, May./June- 2019**

**CHEMISTRY**

**Paper: 5.1 (New)**

**Time : 3 Hours**

**Maximum Marks : 80**

**Instructions to Candidates:**

1. Section A contains questions from Inorganic, Organic and Physical Chemistry
2. Section B contains questions from Inorganic Chemistry.  
Section C contains questions from Organic Chemistry.  
Section D contains questions from Physical Chemistry.
3. Answer all Four sections A,B,C and D

**SECTION-A**

Answer any TEN of the following.

**(10×2=20)**

1. What are Carboranes?
2. What is ferromagnetism?
3. Define Term symbol.
4. State Spin Selection rule.
5. What are thiols? Give example.
6. Mention the compound used as reference in NMR Spectra.
7. What is acidic amino acid? Give an example.
8. What are non equivalent protons.
9. State Grothus-Draper law.
10. Define "einstein".
11. State molar polarisation.
12. What is Chemilluminescence.

**SECTION-B**

Answer any **TWO** of the following.

(2×10=20)

13. a) Explain Guoy method of determination of magnetic susceptibility. (6)  
b) Explain types of electronic spectra of complexes. (4)
14. a) Give the preparation and properties of  $[\text{NiCl}_2]_3$ . (6)  
b) Write preparation and structure of Corborenes. (4)
15. a) Give an account of Ferromagnetism and Para magnetism. (6)  
b) Write a note on structure of Silicates. (4)

**SECTION-C**

Answer any **TWO** of the following.

(2×10=20)

16. a) Discuss the principles and applications if IR Spectra. (6)  
b) Write a note on Chemical Shift. (4)
17. a) Explain the principles and applications of NMR Spectra. (6)  
b) Write a note on Spin-Spin Coupling. (4)
18. a) Give any three methods of preparation of amino acids. (6)  
b) Write a note on acidic properties of amino acids. (4)



**SECTION-D**

Answer any **TWO** of the following.

(2×10=20)

19. a) Derive Beer-Lambert's law. (6)  
b) Write a note on Photo inhibition. (4)
20. a) Write Clausius-Mossotti equation and explain the importance. (6)  
b) Discuss the Photophysical processes  
i) Fluorescence  
ii) Phosphorescence (4)
21. a) Explain the mechanism of photochemical combination of Hydrogen and Chlorine. (6)  
b) Write a note on Photosensitisation. (4)

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