C 20539 **(Pages : 2)** **Name.....**

Reg. No.....

SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022

(CBCSS–UG)

Chemistry

CHE 6B 09—INORGANIC CHEMISTRY—IV

(2019 Admissions)

Time : Two Hours Maximum : 60 Marks

Section A

Answer atleast **eight** *questions.*
Each question carries 3 *marks.*
All questions can be attended.
Overall ceiling 30.

1. What is AAS ?
2. Discuss the principle of FES.
3. La(OH)3 is more basic than Lu(OH)3. Why ?
4. Copper is a transition element. Predict its four important properties.
5. What are d block elements ? Give their electronic configuration.
6. What is meant by stability constant ?
7. What is spectrochemical series ?
8. While $Co[(H_2O)_6]^{2+}$ is pink in colour, $Co(Cl)_4]^{2-}$ is blue in colour. Why ?
9. What is Zeise's salt ? Write its structure.
10. What is Wilkinson's catalyst ? Write its structure.
11. How does Haemoglobin differ from myoglobin ?
12. Why Arsenic is considered as a toxic metal?

(8 × 3 = 24 marks)

Turn over

Section B

Answer atleast **five** *questions.*
Each question carries 5 *marks.*
All questions can be attended.
Overall ceiling 25.

13. What are the factors affecting DTA curves ?

14. What are actinides ? Why are they so called ?

15. Discuss the paramagnetic behaviour of *d* and *f* block elements.

16. What is lanthanide contraction ? What are its consequences ?

17. Cobalt (III) easily forms low spin complexes whereas Cobalt (II) does not. Explain.

18. Discuss any *five* factors influencing the stability of complexes.

19. Give an account of the bio-chemistry and significance of Zinc in living systems.

(5 × 5 = 25 marks)

Section C

Answer any **one** *questions.*
Each question carries 11 *marks.*

20. (a) Describe the ion exchange method for the separation of lanthanides from monazite.

    (b) Comment on the industrial importance of Lanthanides.

21. Write an account on the Molecular orbital theory of octahedral complexes containing only sigma bonds.

(1 × 11 = 11 marks)