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(Pages : 2)

Name.....

Reg. No.....

SIXTH SEMESTER U.G. DEGREE EXAMINATION MARCH 2023

(CBCSS—UG)

Chemistry/Polymer Chemistry

CHE 6B 09—INORGANIC CHEMISTRY—IV

(2019 Admission onwards)

Time : Two Hours

Maximum : 60 Marks

Section A (Short Answers)

Answer **all** *questions.*

Each question carries 2 *mark.*

Ceiling 20.

1. What is the difference between DTA and DSC ?
2. What is the use of thermogravimetric analysis ?
3. Cupric salts are coloured while cuprous salts are colourless. Give reason.
4. Write the formula for spin only magnetic moment of transition ions based on number of unpaired electrons.
5. Why is the increase in the first ionization energy of transition elements not vary regularly with an increase in atomic number ?
6. What is the difference between labile and inert complexes ?
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. Draw the shapes of $Fe(CO)_5$ and $Ni(CO)_4$.
10. What is Zeise's salt? Write its structure.
11. Write a note on effect of mercury on living body.
12. How does Hemoglobin differ from myoglobin ?

(Ceiling of marks : 20)

Turn over

Section B (Paragraph)

Answer **all** *questions.*

Each question carries 5 *marks.*

Ceiling 30.

13. Differentiate between SEM and TEM.
14. Why do lanthanoids form coloured complexes ?
15. What is lanthanide contraction ? What are its consequences ?
16. What are actinides ? Why are they so called ?
17. Cobalt (III) easily forms low spin complexes whereas Cobalt (II) does not. Explain.
18. Give an account of the classification of organometallic compounds by nature of bonding.
19. Give an account of the biological significance of Cobalt in living systems

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Section C (Essay)

Answer any **one** *questions.*

The question carries 10 *marks.*

20. (a) Describe briefly the general characteristics of the f block elements in the periodic t emphasis on their electronic configuration,

    (b) Comment on the industrial importance of Lanthanides.

    Any 10 *points full mark.*

21. (a) Write in detail the preparation and properties of Ferrocene.

    (b) Discuss the nature of bonding in metal carbonyls.

(1 × 10 =