QP CODE: 21101094

21101094

Reg No : .....

Name : .....

B.Sc DEGREE (CBCS) EXAMINATION, APRIL 2021

Sixth Semester

CORE - CH6CRT09 - INORGANIC CHEMISTRY

Common for B.Sc Chemistry Model I, B.Sc Chemistry Model II Industrial Chemistry & B.Sc Chemistry Model III Petrochemicals

2017 Admission Onwards

D006E93B

Time: 3 Hours Max. Marks : 60

Part A

*Answer any **ten** questions.*

*Each question carries **1** mark.*

1. What are ligands? Give an example for hexadentate ligand.
2. Sketch the geometrical isomers of MA_3B_3 type coordination complexes.
3. What is secondary valency?
4. What is the hybridisation and geometry of the complex $[Cr(NH_3)_6]^{3+}$?
5. How does nature of ligands affect crystal field splitting in complexes?
6. Why are transition metal complexes coloured?
7. Name the two possible mechanisms for ligand substitution reaction in coordination complexes.
8. Write any one reaction in Ferrocene.
9. What is Zeise's salt?
10. What is Zeigler Natta catalyst?
11. What is the function of carbonic anhydrase?
12. Write the equation for the preparation of IF.

(10×1=10)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. What is EAN rule? Calculate the EAN of (a) $[Co(NH_3)_6]^{3+}$ (b) $[Ni(CN)_4]^{2-}$ (c) $K_2[TiCl_6]$

14. What is crystal field splitting? Explain Crystal Field Splitting in Octahedral complexes.

15. Explain the application of coordination complexes in qualitative analysis.

16. Classify ligands in organometallic compounds on the basis of hapticity.

17. Briefly discuss the structure of $Mo(CO)_6$

18. What are the functions of alkali and alkaline earth metals in biochemistry?

19. Write any two methods for the preparation of Boric acid. Explain the structure of the same.

20. Explain the electropositive character of iodine.

21. Brifly explain the structure and properties of XeF_4.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **10** marks.*

22. What is Jahn -Teller effect? Explain Jahn – Teller distortion in Cu (II) complexes.

23. Explain trans effect? Discuss on the applications of trans effect.

24. Explain in detail, the structure and bonding in $[Re_2Cl_8]^{2-}$.

25. Explain in detail about the structure and functions of haemoglobin and myoglobin.

(2×10=20)