

# Gurudas College

CU B.Sc. Practical Examination, 2021

Subject-CEMA, SEM-IV

Paper- CC-4-10-P

Time: 1.5 hrs

Full Marks: 30

Answer all questions

5 x 6 = 30

1. During the preparation of  $K[Cr(C_2O_4)_2(H_2O)_2] \cdot 2H_2O$ 
  - i. How the powdered product is obtained from the initially formed syrupy liquid? Mention the name of the technique.
  - ii. Write the IUPAC name of the complex.
  - iii. Draw the structures of both the isomeric forms. 2+2+2
2. In the process of synthesis of  $[Co(NH_3)_4CO_3]NO_3 \cdot 0.5H_2O$ 
  - i. What is the purpose of adding 30%  $H_2O_2$ ? Show the relevant reactions.
  - ii. How the crystallization of the product and its washings are done?
  - iii. Draw the structure of the complex showing the denticity of  $CO_3^{2-}$  as ligand. 2+2+2
3.
  - i. What is the role of  $CH_3COONa$  in the preparation of  $Fe(acac)_3$ ? Explain with reactions.
  - ii. Why distilled acetylacetone is used for the preparation of the complex? Draw the structure of the complex. 3+(1+2)
4.
  - i. Write the IUPAC name of  $[Ni(en)_3]Cl_2 \cdot H_2O$  complex.
  - ii. Mentioning the colour of the complex, describe how the solid product is obtained from the solution? Draw the structure of the complex. 2+(2+2)
5.
  - i. Write the procedure of preparation of the complex  $K_3[Fe(C_2O_4)_3] \cdot 3H_2O$  schematically showing the colour of the product in each step.
  - ii. What is the purpose of adding  $H_2O_2$  in the preparation? Write the relevant reactions. How the washing and drying of the product are performed? 3+(2+1)