



II. Answer *all* the *nine* questions. Each question carries 1 weightage :

13 What is a bridging ligand ?

14 Write the IUPAC name of  $[\text{CoCl}(\text{NO}_2)(\text{en})_2]\text{Cl}$ .

15 Write an example of a complex showing  $d^1 sp^1$  hybridization.

16 What is Zeise's salt ?

17 Write the photosynthesis reaction.

18 What is the function of haemoglobin and myoglobin ?

19 How will you prepare  $\text{NbS}_2$  nanotubes ?

20 Describe the preparation of gallium nitride nanowire.

21 What is safety glass ?

(9 x 1 = 9 weightage)

III. Answer any *five* questions. Each question carries 2 weightage :

22 Draw the structure of complex  $[\text{Co}(\text{NH}_3)_6]^{3+}$  and write the hybridization and geometry.

23 On the basis of VB theory explain the hybridization of  $[\text{Ni}(\text{CO})_4]$ .

24 Write a note on the uses of organo mercury compounds in medicine.

25 Describe polynuclear metal carbonyls.

26 Explain the biochemistry of magnesium.

27 Illustrate the application of nanotechnology in nanoswitches.

28 Explain potash fertilizers.

(5 x 2 = 10 weightage)

IV. Answer any *two* questions. Each question carries 4 weightage :

29 Explain optical isomerism in co-ordination compounds.

30 Illustrate the preparation, properties and structures of different sulphides of phosphorus.

31 Write briefly about carbides and borides.

(2 x 4 = 8 weightage)