

DSPM UNIVERSITY, RANCHI
END SEMESTER EXAMINATION-2020
B.Sc.(H) SEMESTER-VI
Model Question Paper

Sub – **Inorganic Chemistry**
Paper – **XIII**

Time – **2 Hour**
Total Marks – **80**

Section-A

Answer any three questions.

1. (a) Write IUPAC name of the following compounds.
(i) $\text{Ni}(\text{CO})_4$ (ii) $\text{Fe}_2(\text{CO})_4$ (iii) $[\text{V}(\text{CO})_6]^-$ (iv) $\text{Fe}(\text{C}_5\text{H}_5)_2$
(b) $[\text{Fe}(\text{CN})_6]^{3-}$ is more stable than $[\text{Fe}(\text{CN})_6]^{4-}$. Why? **10**
2. Discuss the electronic spectrum $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ complex ion. **10**
3. What is the basic difference between the terms thermodynamic stability and kinetic stability. **10**
4. What are the factors affecting stability of a metal complex considering nature of metal ion. **10**
5. Discuss selection rule for electronic spectra. **10**
6. Write short note on the following:
(a) Spectrochemical series
(b) Spectroscopic ground state **2 x 5**

Section-B

Answer any two questions.

7. Discuss the various types of electronic transitions in transition metal complexes. **25**
8. What are Orgel diagrams? Draw Orgel diagram for d^1 and d^9 system. **25**
9. What are organometallic compounds? Discuss preparation, properties and uses of organolithium compounds. **25**
10. Write short note on the following:
(a) Essential and trace elements
(b) Role of haemoglobin and myoglobin **2x 12 $\frac{1}{2}$**

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