UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Eighth Semester – Spring 2022

Roll No. .....

Paper: Inorganic Chemistry (Sp. Theory -II) **Course Code: CHEM-426** **Time: 3 Hrs. Marks: 60**

THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED

Q.1. Write short answers to the following questions. (15x2=30)

(i) What is relationship between activation energy and rate constant.
(ii) What is trans effect in complexes?
(iii) What is chlorophyll a. Give its molecular formula.
(iv) What is importance of Phosphorus and Silicon in biological systems ?
(v) What is Nickelocene? Give its reduction reaction.
(vi) How can we prepare organometallic compounds from Grignards reagent?
(vii) What are metalloporphyrins? Give the structure of porphyrin ring.
(viii) Differentiate between Hb and HbO_2.
(ix) How IR spectra help in characterization of organometallic compounds ?
(x) d5 octahedral complexes are inert or labile? Explain.
(xi) What is fluxional behaviour in organometallic compounds?
(xii) How cis-platin can be used for cancer treatment ?
(xiii) What is the role of Zinc and Manganese in living things?
(xiv) What is Bohr effect in binding of O_2 to Haemoglobin?
(xv) Write SN1CB mechanism in octahedral complexes.

Q.2. Write detailed answers to the following questions. (3x10=30)

(a) Explain types of redox reactions with examples.
(b) Discuss the chemistry of Ferrocene and Cobaltocene.
(c) What are Siderophores? What is their role in biological systems? Also give examples of non heme proteins.