







# UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Second Semester – 2019

Paper: Chemistry-II (Inorganic Chemistry)

Course Code: CHEM-103, CHM-12304 Part – II

Roll No. ....

Time: 2 Hrs. 45 Min. Marks: 50

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Q.2 Attempt all short questions**

(2 × 10 = 20)

- i. Draw molecular orbital energy level diagram for N<sub>2</sub> molecule.
- ii. Define the term electronegativity.
- iii. What is mass defect?
- iv. How does CFT is superior to VBT?
- v. Phenolphthalein is a weak acid. Justify the statement
- vi. What is leveling effect?
- vii. Define EAN rule with example.
- viii. Differentiate between hard and soft base according to HSAB concept.
- ix. Justify that emission of a  $\alpha$ -particles by a radioactive isotope shifts its two positions to the left in the periodic table.
- x. Differentiate between inner and outer transition elements

**Note: Attempt all questions.**

- Q.3** What is diagonal relationship? Elaborate this concept with few examples (10)
- Q.4** What is isomerism? Discuss different types of isomerism in coordination compounds (10)
- Q.5** a) Describe various uses of radioactive isotopes. (05)
- b) Write down salient features of Valence Shell Electron Pair repulsion theory. (05)

