



UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program : Seventh Semester – 2020

Roll No. in Fig.

Roll No. in Words.

Paper: Inorganic Chemistry (Sp. Theory-I)

Course Code: CHEM-406

Part – I (Compulsory)

Time: 15Min. Marks: 10

Attempt this Paper on this Question Sheet only.

Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Signature of Supdt.:

Q.1. Encircle the right answer cutting and overwriting is not allowed. (10x1=10)

- Which of the following Halogens is a solid at room temperature?
(a) F_2 (b) Cl_2 (c) Br_2 (d) I_2
- Which is a bidentate ligand
(a) chloro (b) aqua (c) oxime (d) ammine
- The molecular weight of Dithizone is
(a) 256.3g/mol (b) 265.3g/mol (c) 263.5g/mol (d) None
- Rubeanic acid exists as a _____ crystalline solid
(a) yellow (b) white (c) orange (d) None
- Which is a bent molecule
(a) H_2O (b) CO_2 (c) CS_2 (d) Cl_2
- Neutral complexes are water
(a) soluble (b) insoluble (c) sparingly soluble (d) None
- The colour of methyl orange below pH 3.1 is
(a) yellow (b) white (c) orange (d) red
- The angle in BeH_2 molecule is
(a) 180° (b) 90° (c) 360° (d) 120°
- The angle in NH_3 molecule is
(a) 109.5° (b) 107.5° (c) 104.5° (d) 102.5°
- In molecular structure carbon and silicon exists in oxidation state:
(a) +1 (b) +2 (c) +3 (d) +4



ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2. Give short answers of the following: (10x2=20)

- (i) Write two drawbacks of VSEPR theory
- (ii) Discuss one experimental evidence for $d\pi - p\pi$.
- (iii) Mention two differences between hybrid orbital and molecular orbital.
- (iv) What is $3c - 4e$ electron bond? Give one example.
- (v) Give two similarities between Li and Mg.
- (vi) What is $s -$ inert pair effect?
- (vii) Why BH_3 is less stable than BF_3 ?
- (viii) Why is buffer used in EDTA titrations?
- (ix) How can chelates be classified?
- (x) Brief acid base indicators?

Q.3. Answers the following questions. (3x10=30)

- i. Discuss periodic anomalies of non-metals and post transition metals.
- ii. a) Briefly discuss stereochemistry with few examples.
b) Write a brief note on Directed Valence Theory.
- iii. Describe some methods to increase the specificity of the organic reagent.