



UNIVERSITY OF THE PUNJAB

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

Paper: Inorganic Chemistry (Sp. Theory -II)

Course Code: CHEM-426 Part – I (Compulsory)

Time: 15 Min. Marks: 10

Roll No. in Fig.

Roll No. in Words.

Signature of Supdt.:

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.

Q.1. Encircle the correct option.

(10x1=10)

- Which of the following is not a haemo protein?
a. Tryptophan pyrrolase b. Tyrosinase c. Myoglobin d. Cytochrome
- Most abundant porphyrin in nature is:
a. Hemoglobin b. Chlorophyll c. Myoglobin d. Both a and b
- Porphyrin ring consist of four pyrrole rings linked by:
a. Methylene bridges b. Methine bridges c. Methoxy bridges d. Methyl bridges
- All are isoelectronic except:
a. $V(CO)_6^-$ b. $Cr(CO)_6$ c. $Mn(CO)_6^-$ d. all are isoelectronic
- Metal-ligand bond strength is highest when ligand donar orbital is:
a. π bond b. lone pair c. σ bond d. all of these
- Which of following would show maximum trans effect?
a. CO b. PH_3 c. PR_3 d. OH^-
- In hemoglobin and myoglobin iron exist in.....oxidation state:
a. +2 b. +3 c. +4 d. +5
- Organotin compounds are effective against:
a. fungal disease b. herbs. c. pest. d. all of these
- Highest energy is associated with:
a. Reactants b. Products c. Activated complex d. all of these
- Number of electrons in valence shell of metal in nickelocene are
a. 18 b. 19 c. 17 d. 16



ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Short Questions

Q. 2 Write down short answers for the following questions: (2 x 10=20)

- (i) Explain S_N1 CB mechanism with an example.
- (ii) Compare myoglobin and hemoglobin with each other.
- (iii) What are the differences between associative and dissociative mechanism.
- (iv) Give suitable examples for preparation of organometallic compounds from Grignard reagent.
- (v) Explain oxidative addition reactions with suitable example.
- (vi) Explain mechanism of Wacker's process?
- (vii) What is the importance of Phosphorous and Silicon in biological systems?
- (viii) Cobaltocene readily undergoes oxidation. Justify with suitable examples.
- (ix) Compare inert and labile complexes with each other.
- (x) How organometallic compounds are important in medical field?

Long Questions

Q. 3 Answer the following: (10 x 3=30)

- (i) What do you understand by term redox reactions? Explain the mechanism for bridged activated complexes.
- (ii) What are Reductive elimination reactions? Explain with reference to organometallic compounds?
- (iii) Explain the biochemistry of iron with reference to bacteria.