

V.P. & R.P.T.P. SCIENCE COLLEGE, VALLABH VIDYANAGAR

Internal Test

B. Sc. (Semester-IV)

Subject: Inorganic Chemistry (US04CCHE01)

Date: 16-03-2015

Time: 10.30 AM to 12.00 Noon

Day: Monday

Total Marks: 25

Q:1 Answer the following multiple choice questions:

[03]

(i) The general electronic configuration of d-block elements can be represented by

(a) $(n-1)d^{1-10} ns^{0-2}$

(b) $(n-1)d^{1-10} ns^{0-1}$

(c) $(n-1)d^{1-10} ns^{0-2} nf^{14}$

(d) $(n-1)d^{1-10} ns^{0-2} nf^{15}$

(ii) The steady decrease in atomic and ionic radii is called

(a) Alkali contraction

(b) Actinide contraction

(c) Earth contraction

(d) Lanthanide contraction

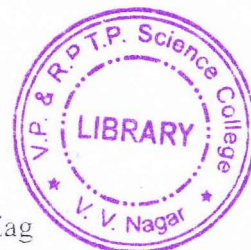
(iii) All mononuclear carbonyls have M-CO bonds.

(a) linear

(b) circular

(c) spiral

(d) Zig-Zag



Q:2 Answer the following (Any Two):

[04]

(i) Most of the compounds formed by transition metals are coloured. Explain.

(ii) What is lanthanide contraction?

(iii) What are poly nuclear carbonyls?

Q:3 (a) Give the name, symbol, complete and valence shell electronic configuration of second transition series elements. [03]

(b) Discuss the classification of d-block elements in 3d, 4d, 5d and 6d series. [03]

OR

Q:3 (a) Discuss the variable oxidation states shown by d-block elements of first transition series under headings: [03]

(i) Acidic and basic character of the compounds

(ii) Relative stability of various oxidation states

(b) Discuss in brief the catalytic activities shown by first transition series elements and their compounds. [03]

Q:4 (a) Give the position of lanthanides in periodic table. [03]

(b) Give the brief account on oxidation states of actinides. [03]

OR

Q:4 (a) Give the name, symbol, atomic number and electronic configuration of lanthanides. [03]

(b) Discuss the cracking of minerals by NaOH method. [03]

Q:5 (a) Discuss the preparation, properties and structure of $Fe(CO)_5$. [03]

(b) Discuss the general methods of preparation of metal carbonyl. [03]

OR

Q:5 (a) Discuss the preparation, properties and structure of $Cr(CO)_6$. [03]

(b) Give the properties of metal nitrosyl carbonyls and metal nitrosyl halides. [03]