

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

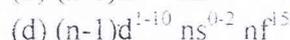
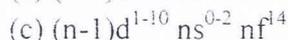
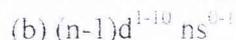
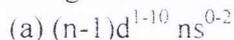
Day: Monday

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



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

(a) Alkali contraction

(b) Actinide contraction

(c) Earth contraction

(d) Lanthanide contraction

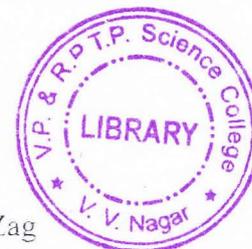
(iii) All mononuclear carbonyls have M-CO bonds.

(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]