Enrollment No:-_____ Exam Seat No:-_____

C.U.SHAH UNIVERSITY

Summer-2015

Subject Code: 4SC03CHC2 Subject Name: Chemistry-IV

Course Name:B.Sc(Pure Science) Date :5/5/2015

Semester:3 Mark: 70

Time:2:30To 5:30

Instructions:

1) Attempt all Questions of both sections in same answer book/Supplementary.
2) Use of Programmable calculator & any other electronic instrument prohibited.
3) Instructions written on main answer book are strictly to be obeyed.
4) Draw neat diagrams & figures (if necessary) at right places.
5) Assume suitable & perfect data if needed.

SECTION – 1

Que: 1 Answer all the following short questions. **(7)**

(i) Define electron gain enthalpy. (01)

(ii) State why argon has no electronegativity value. (02)

(iii) Why are the *f* -block elements referred as inner transition elements? (02)

(iv) Give the general electronic configurations of Lanthanoids.(01)

(v) Which is the most common oxidation state of Lanthanoids ?(01)

Que 2: Answer the following questions. **(14)**

(i) Discuss periodic property of Ionization enthalpy. (05)

(ii) Discuss general characteristic of p & d-block elements. (05)

(iii) Mention the outline of modern periodic table (04)

OR

Que 2: Answer the following questions. **(14)**

(i) Explain the changes in atomic radius and electronegativity when we move from top to bottom in the same group and left to right in the same period. (05)

(ii) Explain why the first ionization energy for sulfur (S) is smaller than the first ionization energy for chlorine (Cl).

(iii) Explain why certain elements in the Periodic Table are classified as p-block elements. Illustrate your answer with an example of a p-block element and give its electronic configuration (04)

Que 3: Answer the following questions **(14)**

(i) Describe the extraction of lanthanides from monozite mineral. (5)

(ii) What is lanthanide contraction? Discuss its causes and consequences**.**(5)

(iii) Write down the uses of lanthanides and actinides. (4)

OR

5-5

Que 3: Answer the following questions **(14)**
(i) Discuss any one method for the separation of lanthanides.(5)
(ii) State chemical properties of lanthanides. (4)
(iii) Discuss oxidation state and magnetic property of lanthanides.(5)

SECTION – 2

Que: 1 Answer all the following short questions. **(7)**
(i) Give the general electronic configurations of Actinoids.
(ii) Write down any one photochemical reaction of ozone. (01)
(iii) Define Pseudohalides and give any one example of it. (01)
(iv) Write down the structure of tripolyphosphoric acid. (01)
(v) Draw the structure of any one pyrosilicate. (01)
(vi) Which Actinides are colorless? (01)
(vii) The principle oxidation states of actinides are _____ and _____. (01)

Que 2: Answer the following questions **(14)**
(i) Discuss structure of diborane. (05)
(ii) Write a short note on structure of interhalogens and thionic acids. (05)
(iii) Explain any four chemical reaction of ozone. (04)

OR

Que 2: Answer the following questions **(14)**
(i) Discuss reactivity of flouro carbons with its environmental effects. (05)

(ii) Discuss briefly structure of borazole and boron nitride. (05)
(iii) Give an explanation about Chemistry of hydrazine and hydroxylamine. (04)

Que 3: Answer the following questions **(14)**
(i) Discuss method for the separation of actinides. (05)
(ii) Give short note on Oxidation state and Oxidation potential of Actinides. (05)
(iii) Discuss general properties of Actinide. (04)

OR

Que 3: Answer the following questions **(14)**
(i) Explain atomic & ionic radii actinide contraction. (05)
(ii) Write a short note on electronic configuration of actinides. (05)
(iii) What are actinides? Discuss its magnetic properties. (04)