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SUBJECT CODE NO:- B-2143
FACULTY OF SCIENCE
B.Sc. F.Y (Sem-I) Examination March/April 2018
Chemistry Paper-I
Inorganic Chemistry

[Time: 1:30 Hours]

[Max.Marks: 50]

- N.B Please check whether you have got the right question paper.
- 1) Attempt all questions.
2) Illustrate your answer with suitable labeled diagram.
- Q.1 a) Define atomic orbital. Give and explain the shapes of S,P and d orbitals. 10
b) What is Ionization energy? Write factors affecting it. 10
- OR**
- c) What are 'S' block elements? Discuss at least five important physical and chemical properties. 10
d) What is diagonal relationship? Explain the diagonal relationship between Boron and Silicon. 10
- Q.2 a) What are 'P' block elements? Explain trends in the following properties of group IIIA or 13 elements. 10
i) Atomic size
ii) Electronegativity
b) What are periodic properties? Explain atomic radii and it's classification. 10
- OR**
- Write a short notes on any four of the following. 20
a) Difference between orbit and orbital.
b) Electron affinity
c) Hydrides of alkali metals
d) Interhalogen compounds
e) Solvation tendency of 'S' block elements.
f) Electronic configuration of group VI A or 16 elements.

Q.3 Attempt the following.

10

- 1) In Aufbau principle, the word 'Aufbau'.
 - a) Represents the name of scientist who developed the principle.
 - b) Is a German word which means "built up".
 - c) Is related to the energy of the electron.
 - d) Is related to angular momentum of the electron.
- 2) Heisenberg's uncertainty principle rules out the exact simultaneous measurement of
 - a) Probability and intensity
 - b) Energy and velocity
 - c) Charge density and radius
 - d) Position and velocity
- 3) Which d-orbital does not have four lobes?
 - a) dz^2
 - b) $dx^2 - y^2$
 - c) dxy
 - d) dyz
- 4) Which of the following does not have any unit?
 - a) Electronegativity
 - b) Electron affinity
 - c) Ionization potential
 - d) Atomic radii
- 5) Aluminum has a diagonal relationship with
 - a) Boron
 - b) Beryllium
 - c) Carbon
 - d) Silicon
- 6) The element with highest electronegativity among halogens.
 - a) F
 - b) Cl
 - c) Br
 - d) I
- 7) Which of the following is alkaline earth metal?
 - a) Li
 - b) Mg
 - c) Rb
 - d) K

8) Which of the following hydride is more acidic in nature?

- a) H_2O
- b) H_2S
- c) H_2Se
- d) H_2Te

9) In a given shell, the order of screening effect is

- a) $S > P > d > f$
- b) $f > d > P > S$
- c) $P < d < S < f$
- d) $d > f > S > P$

10) Diamond is the allotrope of

- a) S
- b) O
- c) C
- d) N