



DOON UNIVERSITY, DEHRADUN
End Semester Examination, 3rd Semester, 2023
Academic Year 2023-2024(Odd Semester)
School of Physical sciences Department Name- Chemistry
Programme Name- B.Sc and B.Sc with Research in Chemistry
Course Code with Title- CYC-201 Chemistry of S and P block elements

Time Allowed 2.00 Hours

Maximum Marks: 30

SECTION: A

(VeryShort Answer Type Questions)

Attempt all questions.

1x10=10

1. What are boranes? Write the structure of B_2H_6 .
2. Identify the structure Cluso, nido and arachno. In $(B_5H_8)Os_3(CO)_{12}$
3. What are pseudohalide ions.
4. Identify the type of Hybridisation in $XeOF_4$ and XeO_3
5. Write the difference between Hydrometallurgy and Pyrometallurgy.
6. Why is the bond angle in PH_4^+ is larger than that of PH_3 .
7. Draw the structure and identify the basicity in orthophosphorous and orthophosphoric acid.
8. What are polyhalides ion. write the structure of I_3^-
9. Define the concepts of HSAB.
10. Give the name and structure of two inorganic and organic polymers.

SECTION: B

(Short Answer Type Questions)

2x5=10

1. What is vapour phase refining? Explain Van- Arkel method.
2. What is VSEPR theory.

3. Write two methods of preparation and properties of Boranes.
4. What are oxy acids. Write the different oxyacids of phosphorous.
5. Differentiate between allotropy and catenation.

SECTION: C

(Long Answer Type Questions) 2x5=10

1. Describe the Hydrides of Group 15, 16 and 17. How bond angle, Hybridisation varies in a group and periods.
2. Explain the following: 1. Mond's Process.
2. Interhalogen compounds.