



Date: 31-10-2018

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

**PART-A**

Answer ALL Questions

(10x2=20 marks)

1. What are 's' block elements?
2. Why is potassium more reactive than calcium?
3. Explain why aluminium trihalides exist as dimers while boron trihalides exist only as monomers?
4. What are covalent carbides? Give an example.
5. NO<sub>2</sub> readily dimerizes while NO does not-Why?
6. What are amphoteric oxides? Give an example.
7. Fluorine has lower electron affinity than chlorine-Why?
8. Name the two oxy acids of chlorine having +5 and +7 oxidation states.
9. What is 'F' center?
10. What are Miller indices?

**PART-B**

Answer any EIGHT Questions

(8x5=40 marks)

11. Discuss the characteristics of oxides of S-block elements.
12. Explain the diagonal relationship between lithium and magnesium.
13. Explain the chemistry involved in the borax bead test.
14. Explain the structure and bonding in diborane.
15. Write the structural differences between graphite and diamond.
16. Discuss the preparation, properties and structure of phosphorus pentoxide.
17. How is hydrazine prepared? How does it react with (i) ozone and (ii) silver nitrate.
18. How is sodium bismuthate prepared? Explain its important properties and uses.
19. Discuss the abnormal behaviour of fluorine.
20. Derive Bragg's equation.
21. Write a note on 'Schottky defects'.
22. Explain the structure of Zinc blende.

**PART-C**

Answer any **FOUR** Questions

**(4x10=40 marks)**

23. Write a note on crown ethers.

24. Explain the properties and structure of three dimensional silicates.

25. Discuss the preparation, properties, structure and uses of Caro's acid.

26. a) Write a note on phosphate fertilizers. (6)

b) What are meta phosphates? Give any two examples. (4)

27. What are pseudo halogens? Explain their chemistry with suitable examples.

28. a) Discuss the principle of X-ray diffraction analysis

b) Write a note on Bravais lattices.

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