Sr.No. 3094

Exam Code:103202
Subject Code: 7512

B.A/B.Sc - 2nd Semester (old sylb 2018-19)

(2721)

Paper: Chemistry (Inorganic Chemistry-A)

Time Allowed: 2 hrs. **Max. Marks: 35**

Note: There are EIGHT questions of equal marks. Candidates are required to attempt any FOUR questions.

Section - A

1. (a) BBr_3 is better lewis acid than BF_3. Why? $(2\frac{1}{2})$
   (b) What is meant by diagonal relationship in periodic classification? Discuss the diagonal relationship between boron and silicon. $(6\frac{1}{4})$
2. Write a brief note on:
   (i) Anomalous behavior of fluorine
   (ii) Fullerenes $(8\frac{3}{4})$

Section - B

3. (a) NaOH is stronger base than $Ba(OH)_2$. Explain. $(2\frac{1}{2})$
   (b) How does lithium differ from its congeners? $(6\frac{1}{4})$
4. (a) Define acid and base in terms of Bronsted-Lowry concept. Also give one limitation of this concept. $(3\frac{3}{4})$
   (b) Describe in detail the chemistry of liquid ammonia as a solvent. (5)

Section - C

5. What are phosphazenes? Discuss the nature of bonding in cyclic triphosphazenes. Also give important applications of polyphosphazenes. $(8\frac{3}{4})$
6. (a) What are silicones? Also discuss its applications. $(3\frac{3}{4})$
   (b) How will you prepare tetrasulphur tetranitride? Also briefly discuss its structure and conductivity. (5)

Contd....P/2

Section - D

7. (a) Compounds of s and p block elements are generally colourless while those of transition elements are coloured. How would you explain this behavior? $(3\frac{3}{4})$

   (b) Calculate the magnetic moment of (i) $[Ni(en)_3]Cl_2$ and (ii) $[Fe(NH_3)_6]^{3+}$ using spin only formula. (5)

8. Discuss the comparison of properties of first transition metal series with those of second and third transition series. $(8\frac{3}{4})$

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