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Roll No.

Total Pages : 3

322301

Jan. 2022

B.Sc. (Chemistry)-III SEMESTER

Inorganic Chemistry-II (BCH-301)

Time : 90 Minutes]

[Max. Marks : 25

Instructions :

1. *It is compulsory to answer all the questions (1 mark each) of Part-A in short.*
2. *Answer any three questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) Write electronic configuration of cesium and strontium. (1)
- (b) Why alkali metals are soft and have low melting points? (1)
- (c) Is EDTA soluble in water or not? (1)
- (d) BF_3 is weaker Lewis acid than BCl_3 . Explain (1)
- (e) ICl_7 does not exist while IF_7 exists. Explain. (1)
- (f) Explain why H_3PO_3 is dibasic acid. (1)
- (g) What is the basic structural unit of silicates? (1)

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- (h) Why carbon shows maximum catenation? (1)
(i) Why iodine is used in van Arkel process? (1)
(j) Draw the structure of XeF_2 . (1)

PART-B

2. (a) (i) Why do alkali metals form blue conducting solution in liquid ammonia? (1.5)
(ii) Why do Be and Mg not impart any characteristic flame colour? (1.5)
(b) Explain differences in complexing abilities of cyrptates and crown ethers with alkali metals. (2)
3. (a) Explain why Li forms oxide, Na the peroxide and K the superoxide. (2)
(b) How is Ni purified by Mond's process? (3)
4. (a) What are the salient features of Ellingham diagram? (2)
(b) (i) Lithium carbonate is unstable while other metal carbonates are stable. Explain. (1.5)
(ii) Can you dissolve sodium hydride in water? (1.5)
5. (a) Define diagonal relationship. Give resemblance between B and Si. (3)

- (b) Compare the acidic characters of :
Hypochlorous acid, Chloric acid, Chlorous acid and Perchloric acid. (2)

6. (a) Discuss inert pair effect by taking suitable example. (2)
(b) (i) Why are pentahalides more covalent than trihalides? (1.5)
(ii) Why is borazine known as inorganic benzene? (1.5)
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