



K16U 1740

Reg. No. :

Name :

V Semester B.Sc. Degree (CBCSS – 2014 Admn. Regular)

Examination, November 2016

CORE COURSE IN CHEMISTRY

5B07 CHE : Inorganic Chemistry – I

Time : 3 Hours

Max. Marks : 40

SECTION – A

(Answer **all** questions. **Each** question carries **one** mark).

1. What is meant by inert pair effect ?
2. What are orthosilicates ? Give one example.
3. How is boric acid prepared ?
4. List any two uses of Argon.

(1×4=4)

SECTION – B

(Answer **any seven** questions. **Each** question carries **2** mark).

5. Explain why CCl_4 resists hydrolysis while SiCl_4 gets readily hydrolysed.
6. What are clathrates ? Give examples.
7. Give an account of fluorocarbons.
8. How does sodium occur in nature ? How is it extracted ?
9. What are super refractories ? How are they useful ?
10. How are organometallics classified ? Give one example for each class.
11. How is borazine prepared ? Explain its structure.

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12. What is meant by ionisation enthalpy ? What are the factors influencing it ?
13. How would you account for the different flame colours produced by alkaline earth metals ?
14. What is the ratio of ortho and para hydrogen at room temperature and above ?
Why ? (2×7=14)

SECTION – C

(Answer **any 4** questions. **Each** question carries **3** mark).

15. Define electronegativity. How will you calculate the electronegativity using Paulings and Mullikkans method ?
16. Compare the first transition series with second and third.
17. Write a note on carbides.
18. Give the preparation of binuclear and trinuclear carbonyls of Fe.
19. How can you prepare silicones ? Mention any two applications.
20. Explain 18 electron rule. Illustrate its application in finding the M-M bond. (4×3=12)

SECTION – D

(Answer **any 2** questions. **Each** question carries **5** marks).

21. Explain the preparation, properties and structure of ferrocene.
22. Give an account of sulphur-nitrogen polymers.
23. a) Comment on the position of noble gases in the periodic table.
b) Give the structure of the following
 XeF_4 , XeO_2F_2 , XeO_3 .
24. a) What are characteristics of the metal solutions in liquid ammonia ?
b) What are the similarities in properties between Li and Mg ? (5×2=10)
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