(Pages : 3) **H – 1535**

Reg. No. : .....

Name : .....

Third Semester B.Sc. Degree Examination, October 2019

First Degree Programme under CBCSS

Chemistry

Core course – II

CH 1341 : INORGANIC CHEMISTRY — II

(2017 Admission onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions. Each question carries 1 mark.

1. What is the bond order in CO molecule?
2. Define hydrogen bond.
3. Define half-life period.
4. What is the common name of C-60?
5. Give an example for inter halogen compound
6. What are zeolites?
7. Compare the stability of O_2, O_2^+ and O_2^-
8. Give the main constituents in ordinary glass.

P.T.O.

9. What is the Shape of SF_6?

10. Name the stronget oxy-acid of Chlorine.

(10 × 1 = 10 Marks)

SECTION – B

Answer **any eight** questions. Each question carries **2** marks.

11. List out important applications of Born-Haber cycle.

12. State Geiger – Nuttal rule.

13. What is mass defect?

14. What are nitrides? Write a short note on Si_3N_4.

15. What are Silicides? Give example.

16. Write a note on Boron nitride.

17. What is meant by glass transition temperature?

18. What are the uses of noble gases?

19. Though B-F bond is polar, BF_3 is non polar. Justify.

20. Water is a liquid whereas H_2S is gas at room temperature. Explain. Why?

21. What is critical mass?

22. What are Fajan's rules?

(8 × 2 = 16 Marks)

SECTION – C

Answer **any six** questions. Each question carries **4** marks.

23. Explain what is artificial radioactivity.

24. What do you mean by neutron activation analysis? Explain.

25. Explain the hybridization in methane and acetylene.

26. Briefly explain sol-gel method for the preparation of nanomaterials.

27. Write the postulates of VSEPR theory.

28. Write briefly on silicates.

29. Write a note on nuclear fission?

30. Briefly describe the properties and applications of Fullerenes.

31. Give the preparation and properties of any one phosphorus based polymers.

(6 × 4 = 24 Marks)

SECTION – D

Answer **any two** questions. Each question carries **15** marks.

32. (a) Discuss various applications of radioactivity **10**

    (b) Write a note on silicon based polymers. **5**

33. (a) Draw the MO diagram of NO and N_2 molecule. **10**

    (b) Write a note on borazole. **5**

34. (a) Give a detailed note on Xenon compounds. **10**

    (b) Write a note on carbon nanotubes. **5**

35. (a) Give preparation, properties and bonding in diborane. **10**

    (b) Brief explain interhalogen compounds. **5**

(2 × 15 = 30 Marks)