15U511 (Pages:2) Name: …….

Reg. No: ……

FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, OCTOBER 2017

(CUCBCSS-UG)

CC15U CHE5 B06- INORGANIC CHEMISTRY - III

(Chemistry - Core Course)

(2015-Admission Regular)

Time: Three Hours Maximum: 80 Marks

Section A

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

1. Give an example of specific gravimetric precipitant.
2. What is the shape of iodine pentafluoride?
3. Name the compound responsible for Bhopal tragedy.
4. What is the hybridization of carbon in graphite?
5. Write the expression for the solubility product of calcium phosphate.
6. The alkali metal that can directly combine with nitrogen is ------
7. Hexagonal boron nitride has a structure similar to that of -------
8. Zircon forms an example for ------ silicate.
9. Polymeric sulphur nitride is known as --------
10. An example for greenhouse gas is --------

(10x1 =10 Marks)

Section B

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

11. How borate is eliminated from an inorganic mixture? What is the chemistry of the reaction?
12. What are silicones?
13. What is diagonal relationship? Give an example.
14. Explain inert pair effect.
15. Which has high ionization energy, N or O? Why?
16. Draw the structure of N_2O_5
17. How is disulphur dinitride prepared?
18. What is eutrophication?
19. What are the desirable properties of a gravimetric precipitate?
20. Differentiate between accuracy and precision.

21. What are the harmful effects of mercury?
22. How is photochemical smog formed?

(10x2= 20 Marks)

Section C

Answer any ***five*** questions. Each question carries 6 marks

23. What is coprecipitation? What are the mechanisms by which coprecipitation occurs?
24. What is COD? How it is determined?
25. Discuss the chemistry of liquid ammonia as a solvent.
26. Write notes on interhalogen compounds.
27. What are the consequences of radioactive pollution?
28. How is borazine prepared? Explain its reactions with (a) HCl (b) Water
29. Write notes on solid waste management.
30. Discuss the application of solubility product and common ion effect in qualitative analysis.

(5x6 = 30 Marks)

Section D

Answer any ***two*** questions. Each question carries 10 marks

31. Explain the variation in the following properties in the case of carbon family.
    (i)Atomic radii (ii) Ionization energy (iii) electronegativity
    (iv) Oxidation state (v) Catenation.
32. (a) Explain the separation of noble gases by charcoal adsorption method.
    (b) What is Haber process for the preparation of ammonia? Explain the variation in bond angles among the hydrides of nitrogen family.
33. Explain (i) green house effect (ii) acid rain (iii) ozone depletion.
34. Explain the preparation, structure, properties and applications of phosphazenes.

(2 x10 = 20 Marks)

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