

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the academic year 2011 – 12 and thereafter)

SUBJECT CODE: 11CH/MC/IC34

B.Sc. DEGREE EXAMINATION, NOVEMBER 2015
BRANCH IV- CHEMISTRY
THIRD SEMESTER

REG.NO

COURSE : MAJOR CORE

PAPER : INORGANIC CHEMISTRY-II

TIME : 30 MINUTES

MAX.MARKS : 30

SECTION – A

ANSWER ON THE QUESTION PAPER ITSELF

Answer all the questions

I Choose the correct answer: (10x1= 10 marks)

- Among the following which one is alkali metal.
a) Ca b) Ba c) Na d) Sr
- The heavy water can be represented as
a) H₂O b) H₃O⁺ c) D₂O d) D₂O*
- The number of 2c-2e bond in diborane is
a) 2 b) 3 c) 4 d) 5
- An example for an electron rich compound is
a) Diborane b) Methane c) Ammonia d) Fluorine
- The simplest oxide formed by boron is
a) BO b) B₂O₃ c) B₂O d) B₂O₆
- The geometry of bromine trifluoride molecule is
a) Linear b) Triangle c) T-shaped d) Planar
- The atomic number of Xenon is
a) 18 b) 36 c) 54 d) 86
- As for the VSEPR theory, the repulsion is more in
a) bond pair-bond pair electrons b) bond pair-lone pair
c) lone pair-lone pair electrons d) none of the above
- The formula for carborundum is
a) SiB b) SiCl₄ c) SiC d) SiO₂
- The process at Galvanizing is accompanied by
a) Magnesium coating b) Zinc coating
c) Aluminium coating d) Silver coating

II Fill in the blanks:

11. _____ is used as a moderator in nuclear reactor.
12. The chief ore of beryllium is _____.
13. The stable oxidation state of Thallium is _____.
14. Silicones have _____ repellent properties.
15. The formula for hydrazine molecule is _____.
16. HClO_4 can be called as _____.
17. The eighteenth group elements are otherwise called as _____.
18. The radioactive element among the noble gas is _____.
19. The process of coating chromium over other metal is _____.
20. _____ is an example for a refractory material.

III. State whether true or false:

(5x1= 5 marks)

21. Lithium aluminium hydride is a polymeric hydride.
22. The repeating unit in silicate is SiO_4^{2-} .
23. Phosphorus pentoxide is a reducing agent.
24. Xenon form clathrate compounds.
25. Titanium dioxide is a white pigment.

IV. Answer the following in a line or two:

(5x1 = 5 marks)

26. List out any two importance of cryptates.
27. Give any one preparation of Boron nitride.
28. Write down the different oxides of nitrogen.
29. Draw the structure of xenon hexafluoride.
30. What are enamels?

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SECTION – B

Answer any five questions:

(5x6=30 marks)

1. Explain the extraction of lithium from spodumene.
2. Give an account of the preparation and properties of borazole.
3. Write short notes on hydrazoic acid and pseudohalogens.
4. Explain the occurrence and position of noble gases in the periodic table.
5. Give an account of electroplating with suitable example.
6. How can you compare the hydrides and halides of oxygen group elements?
7. Explain the structure and applications of phosphonitrilic polymers.

SECTION – C

Answer any two questions:

(2x20=40 marks)

8. a) What are crown ethers? Explain with an example. (4)
b) What are hydrides? Explain the different types of hydrides with suitable example. (10)
c) Write down the preparation and properties of hydroxylamine. (6)
9. a) Give an account of the preparation, properties and uses of silicones.
b) Explain the preparation, properties and structure of peracids of sulphur. (10)
10. a) What are clathrate compounds? Give its applications. (5)
b) Explain the composition and setting of cement. (5)
c) Give the preparation, properties and structure of XeOF₂. (5)
c) Account for the basic nature of iodine. (5)
