

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the academic year 2015 – 16)

SUBJECT CODE: 15CH/MC/IC34

B.Sc. DEGREE EXAMINATION, NOVEMBER 2016
BRANCH IV- CHEMISTRY
THIRD SEMESTER

REG.NO

COURSE : MAJOR CORE

PAPER : INORGANIC CHEMISTRY-I

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)

- Which of the following elements is referred to as chalcogens?
a. Halogens b. Oxygen family c. Nitrogen family d. Boron family
- Which is the most reactive gas among the following?
a. Helium b. Neon c. Xenon d. Argon
- Teluric acid is
a. H_2TeO_2 b. H_2TeO_3 c. H_2TeO_4 d. H_2TeO_5
- An element finding application in Xerox machines is
a. Po b. Be c. S d. Se
- The element with maximum electron affinity is
a. F b. Cl c. Br d. I
- Which one of the following alkali metals does not form super oxide?
a. Potassium b. Lithium c. Sodium d. Cesium
- The structure of XeF_2 is
a. Tetrahedral b. Square planar c. Linear d. Trigonal bipyramidal
- The formula of rock salt is
a. KCl b. NaCl c. MgCl_2 d. CaCl_2
- Which one of the following hydrides is least stable?
a. LiH b. NaH c. KH d. RbH
- Electronegativity
a. decreases from top to bottom in a group
b. increases from top to bottom in a group
c. decreases from left to right in a period
d. remains the same from left to right in a period

II. Fill in the blanks:

11. Alkali metal dissolves in liquid ammonia and impart _____ colour .
12. The oxidation state of chlorine in HClO_3 is _____.
13. The colour of lithium nitride is _____.
14. $(\text{CN})_2$ is an example of _____.
15. On moving down the group the metallic character of oxygen family _____.
16. Basicity of phosphoric acid is _____.
17. The formula for Caro's acid is _____.
18. Bauxite is the principal ore of _____.
19. The ionic radius of Fe^{3+} ion is _____ than that of Fe^{2+} ion.
20. LiH is an example of _____ hydrides.

III. State whether true or false:

(5x1= 5 marks)

21. Solid ice has higher density than liquid water.
22. Lithium hydroxide is less basic than sodium hydroxide.
23. Diborane is an electron rich compound.
24. Red phosphorous is more stable than white phosphorous.
25. Borazine is known as inorganic benzene.

IV. Answer the following in a line or two:

(5x1 = 5 marks)

26. What is inert pair effect?
27. Define ionization energy.
28. What are silicones?
29. Give any one use of boric acid.
30. What is catenation?

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the academic year 2015 – 16)

SUBJECT CODE: 15CH/MC/IC34

B.Sc. DEGREE EXAMINATION, NOVEMBER 2016
BRANCH IV- CHEMISTRY
THIRD SEMESTER

COURSE : MAJOR CORE

PAPER : INORGANIC CHEMISTRY-I

TIME : 2½ HOURS

MAX.MARKS: 70

SECTION – B

Answer any five questions:

(5x6=30 marks)

1. Explain the structure of I_2O_5 and BrF_3 .
2. Discuss briefly on clathrate compounds.
3. Compare the oxides and carbonates of alkali metals.
4. Discuss about the preparation and properties of xenon hexafluoride.
5. Write a brief note on basic nature of iodine.
6. Discuss about different types of hydrogen bonding with examples.
7. Explain the structure of B_2H_6 .

SECTION – C

Answer any two questions:

(2x20=40 marks)

8. a. Give a comparative account of hydrides, dioxides and tetrahalides of carbon group elements. (9)
b. Discuss about the reactions of hydrazine and explain its structure. (7)
c. Give any four applications of phosphonitrilic compounds. (4)
9. a. Discuss about the diagonal relationship of beryllium with aluminium. (6)
b. Write a note on crown ethers. (6)
c. Discuss the important properties of saline and molecular hydrides. (4+4)
10. a. What is HSAB principle? Discuss its applications. (6)
b. Discuss about the method of extraction of lithium from spodumene. (8)
c. Give one method of preparation of dichlorine monoxide and perchloric acid. (6)
