



Reg. No. : .....

K19U 3172

Name : .....

I Semester B.Sc. Degree (CBCSS-Supplementary / Improvement)  
Examination, November - 2019  
(2014-2018 Admissions)

COMPLEMENTARY COURSE IN CHEMISTRY  
1C01 CHE: CHEMISTRY (FOR PHYSICAL AND BIOLOGICAL  
SCIENCE)

Time : 3 Hours

Max. Marks : 32

### SECTION - A

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

(5x1=5)

1. Write down de Broglie equation and define the terms.
2. What is meant by electrolysis?
3. Define transport number of an ion.
4. What is an ionic bond? Give one example for an ionic compound.
5. Why alkali metals have the lowest ionization energy?

### SECTION - B

(Answer any **Four** questions. Each question carries **2** marks) (4x2=8)

6. State Heisenberg's uncertainty principle.
7. Distinguish between electro negativity and electron affinity.
8. State faraday's first and second laws of electrolysis.
9. Explain coagulation method for water purification.
10. What is the cause of lanthanide contraction?
11. Arrive at the shape and bond angles of SF<sub>6</sub> molecule using VSEPR theory.

P.T.O.

**SECTION C**

(Answer any **Three** questions. Each question carries **3** marks) **(3x3=9)**

12. Write a note on the three water quality parameters; DO, BOD and COD.
13. Define lattice energy of ionic compounds. Suggest a method to determine lattice energy.
14. Difference between biological magnification and bioaccumulation.
15. How will you explain the geometry of  $\text{NH}_3$  and  $\text{H}_2\text{O}$  on the basis of hybridisation?
16. Explain molecular orbital theory for homonuclear diatomic molecules.

**SECTION D**

(Answer any **Two** questions. Each question carries **5** marks) **(2x5=10)**

17. What are the causes of air pollution? Mention their effect on biotic components.
  18. Define specific and molar conductance. Explain their variation with dilution.
  19. Discuss the atomic spectra of hydrogen atom. Calculate the wavelength limits of the Balmer line of Hydrogen atom.
  20. What is meant by hydrogen bonding? Discuss different types of hydrogen bonding with suitable examples.
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