



K15U 0574

Reg. No. :

Name :

I Semester B.Sc. Degree (CCSS – Reg./Supple./Improv.) Examination,
November 2015

COMPLEMENTARY COURSE IN CHEMISTRY

1C01 CHE : Chemistry (For Physical and Biological Sciences)
(2014 Admn. Onwards)

Time : 3 Hours

Max. Marks : 32

SECTION – A

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

1. What is BOD ?
2. Define ionic mobility.
3. How do specific conductance and molar conductance vary with dilution ?
4. State Heisenbergs uncertainty principle.
5. What is bond order ? What is its significance ? (1×5 = 5)

SECTION – B

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

6. Explain the consequences of acid rain.
7. State and explain Kohlrauschs law.
8. Differentiate between bonding and antibonding molecular orbital.
9. Write Schrodinger wave equation and explain the terms.
10. Compare the hydrogen bonding in HF and in H₂O.
11. Calculate the wavelength of the matter wave associated with a particle of mass 10 gm moving with a velocity of 1000 cm/ sec. (2×4 = 8)

P.T.O.



SECTION – C

Answer **any three** questions. **Each** question carries **3** marks.

12. State and explain Faradays laws of electrolysis.
13. What are the methods to control water pollution ?
14. What are the postulates of VSEPR theory ?
15. Explain the hydrogen spectra.
16. Define ionization enthalpy. What are the factors determining ionization enthalpy ?
(3×3 = 9)

SECTION – D

Answer **any two** questions. **Each** question carries **5** marks.

17. a) Discuss the importance of ozone layer. 1
b) Explain the factors responsible ozone layer depletion and its consequences. 4
18. What are quantum numbers ? Explain the different types.
19. a) What is the difference between metallic conduction and electrolytic conduction ? 1
b) How molar conductance at infinite dilution of a weak electrolyte is determined ? 2
c) The conductivity of 0.1M KCl at 25° C is $0.01289 \text{ ohm}^{-1} \text{ cm}^{-1}$ and its resistance is found to be 192.3 ohm when taken in a conductivity cell. A 0.01M solution of another electrolyte AB when taken in the same cell offer a resistance of 250 ohms. Calculate the molar conductance of AB. 2
20. a) Explain the hybridization of the central atom in PCl_5 and SF_6 . 3
b) Write a note on hydrogen bonding. 2

(5×2 = 10)