



K16U 2488

Reg. No. :

Name :

I Semester B.Sc. Degree (C.C.S.S. – Reg./Supple./Improv.)
Examination, November 2016
COMPLEMENTARY COURSE IN CHEMISTRY
1C01 CHE : Chemistry (For Physical and Biological Sciences)
(2014 Admn. Onwards)

Time : 3 Hours

Total Marks: 32

SECTION – A

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

1. Define equivalent conductance. How does it vary with dilution ?
2. Define electronegativity.
3. State Heisenbergs uncertainty principle.
4. What is meant by cell constant ?
5. What are the adverse effects of noise pollution ?

(5×1=5)

SECTION – B

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

6. The equivalent conductances of $\text{Ba}(\text{OH})_2$, BaCl_2 and NH_4Cl at infinite dilution are respectively 228.8, 120.3 and 129.8 $\text{S cm}^2 \text{eq}^{-1}$. Calculate the equivalent conductance of NH_4OH .
7. The use of pesticides has become an environmental hazard. Explain.
8. Write Schrodinger wave equation and explain the terms.
9. Explain sp^2 hybridisation with a suitable example.
10. What is chemical oxygen demand ? How is it determined ?
11. What is meant by screening effect ?

(4×2=8)

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K16U 2488



SECTION – C

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

12. What are the advantages of conductometric titration ?
13. What are the adverse effects of acid rain ?
14. Explain two methods for the desalination of water.
15. Calculate the lattice energy of sodium chloride from the following data, the sublimation energy of sodium metal is 108 kJ mol^{-1} , heat of dissociation of chlorine molecule is 242 kJ mol^{-1} , ionization energy of sodium is 496 kJ mol^{-1} , electron affinity of chlorine is $-348.6 \text{ kJ mol}^{-1}$ and standard heat formation of NaCl is -411 kJ mol^{-1} .
16. What are the limitations of Bohr atom model ? (3×3=

SECTION – D

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

17. a) What is meant by transport number ?
b) Explain the determination of transport number by Hittorfs method.
 18. a) What is importance of ozone layer in atmosphere ?
b) Discuss the factors responsible and consequences of ozone layer depletion.
 19. a) Give an outline of VSEPR theory.
b) Explain the shapes of ClF_3 , NH_3 , H_2O on the basis of this theory.
 20. a) What are quantum numbers ?
b) Explain the four different types of quantum numbers. (2×5=
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