



K16U 0615

Reg. No. : .....

Name : .....

IV Semester B.Sc. Degree (CBCSS – 2014 Admn. – Regular)

Examination, May 2016

COMPLEMENTARY COURSE IN CHEMISTRY

4C04CHE(PS) : Chemistry (For Physical Sciences)

Time : 3 Hours

Max. Marks : 32

SECTION – A

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

1. Define space lattice.
2. What is common ion effect ?
3. Write Nernst equation for the EMF of a cell.
4. What are azeotropes ?
5. State phase rule.

(5×1= 5)

SECTION – B

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

6. What are the applications of liquid crystals ?
7. What are the limitations of amperometric titrations ?
8. Calculate the RMS velocity of O<sub>2</sub> at 25°C.
9. What are the different types of concentration cells ?
10. State Ostwalds dilution law.
11. What is meant by efflorescence ?

(4×2= 8)

SECTION – C

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

12. Describe the structure of NaCl.
13. Differentiate between most probable velocity and rms velocity.

P.T.O.



14. Write a note on calomel electrode.
15. Explain the principle of steam distillation.
16. Calculate the degree of hydrolysis of 0.2 M sodium acetate solution in water  $K_a$  of acetic acid is  $1.8 \times 10^{-5}$ ,  $K_w$  is  $1 \times 10^{-14}$ . **(3×3=9)**

### SECTION – D

Answer any 2 questions. **Each** question carries 5 marks.

17. a) Give a brief account of Debye-Huckel theory.  
b) What are the factors influencing degree of dissociation ?
18. a) Write Vander Waal's equation and explain the terms.  
b) How are the critical constants determined ?
19. Give a detailed account of the instrumentation and applications of DTA.
20. Discuss the lead-silver system and verify it as a simple eutectic. **(2×5=10)**