K17U 0619

Reg. No. : ....

Name : ....

IV Semester B.Sc. Degree (CBCSS – Reg./Supple./Imp.)
Examination, May 2017
(2014 Admn. Onwards)
COMPLEMENTARY COURSE IN CHEMISTRY
4C04 CHE(PS) : Chemistry (For Physical Science)

Time : 3 Hours

Max. Marks : 32

SECTION – A

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

1. Define most probable velocity.

2. Give one example of an acidic salt.

3. Name any of two thermal methods of analysis.

4. What are the different types of liquid crystals ?

5. What is meant by single electrode potential ?   **(1×5=5 Marks)**

SECTION – B

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

6. What are the causes of deviation of real gases from ideal behaviour ?

7. Explain the terms Weiss and Miller indices.

8. What is a calomel electrode ? Give the electrode reaction.

9. State and explain Raoults law.

10. Derive an expression for the hydrolysis constant of an acidic salt.

11. Explain the terms eutectic point and congruent melting point.   **(2×4=8 Marks)**

SECTION – C

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

12. What are ideal and non ideal solutions ? Draw a distillation diagram of a solution showing positive deviation.

P.T.O.

13. Explain the basic instrumentation of uv-visible spectrophotometry.

14. Give an account of concentration cells.

15. Explain Debye Huckel theory of strong electrolytes.

16. Calculate the RMS velocity of chlorine molecules at 12°C and 78 cm pressure.

(3×3=9 Marks)

SECTION – D

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

17. Give an account of amperometric method. What are its advantages and disadvantages ?

18. a) How X-rays are useful in the study of crystals ?

    b) At what angle would the second order diffraction be observed in X-ray diffraction of asset of crystal planes for which d is 2.04×10^{-10} m if X-rays used have a wavelength of 1.54×10^{-10} m.

19. a) Discuss the Maxwell Boltzman distribution of molecular velocities.

    b) Describe an experiment to determine critical temperature of a gas.

20. a) Explain the phase diagram of sulphur.

    b) What is meant by deliquescence and efflorescence ?   (5×2=10 Marks)

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