



K26U 1014

Reg. No. :

Name :

IV Semester B.Sc. Degree (C.B.C.S.S. – O.B.E. – Supplementary/
Improvement) Examination, April 2026
(2020 to 2023 Admissions)

COMPLEMENTARY ELECTIVE COURSE IN CHEMISTRY/
POLYMER CHEMISTRY

4C04 CHE/PCH (PS) : Chemistry (for Physical Sciences)

Time : 3 Hours

Max. Marks : 32

SECTION – A

Very short answer type. **Each** carries **1** mark. Answer **all 5** questions.

1. Write the equation of RMS Velocity.
2. What are colligative properties ?
3. Write Nernst equation for Daniel cell reaction.
4. Define Bragg's equation.
5. Define isotropy.

(5×1=5)

SECTION – B

Short answer type. **Each** carries **2** marks. Answer **4** questions out of 6.

6. What is Osmotic pressure ? Write equation.
7. Write Vander Waal's equation. Explain terms.
8. What is transport number ? Write the name of any one of the method of determination of transport number.
9. Define Boyle's law. Write equation.
10. Calculate the EMF of the cell $\text{Cu}/\text{Cu}^{2+} // \text{Ag}^+/\text{Ag}$. The standard electrode potentials are $E^\circ \text{Cu}^{2+}/\text{Cu} = 0.34\text{V}$, $E^\circ \text{Ag}^+/\text{Ag} = 0.80\text{V}$.
11. What are liquid crystals ? Give two examples.

(4×2=8)

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SECTION – C

Short essay/problem type. **Each** carries **3** marks. Answer **3** questions out of 5.

12. Calculate the angle at which second order diffraction will appear in a X-ray spectrometer when X-rays of wavelength $7.5 \text{ \AA}$ are used and inter planar distance is $4.04 \text{ \AA}$.
13. Differentiate between metallic and ionic conductors.
14. Explain standard hydrogen electrode.
15. Write principles of DTA. Give applications.
16. Write optical and mechanical properties of nano particles.

(3×3=9)

SECTION – D

Long essay type. **Each** carries **5** marks. Answer **2** questions out of 4.

17. a) What are real gas ?
b) Explain Liquefaction gas by any one method.
18. a) What is meant by conductance ?
b) Explain any two different types of conductometric titrations with proper graphical representations.
19. Discuss various methods of preparation of nano particles.
20. a) What is Galvanic cell ? Write electrode reactions.
b) Explain different types of concentration cells.

(2×5=10)