Reg. No. : ....

Name : ....

Second Semester B.Sc. Degree (C.B.C.S.S. – OBE – Supplementary/
Improvement) Examination, April 2025
(2019 to 2023 Admissions)
COMPLEMENTARY ELECTIVE COURSE IN CHEMISTRY/POLYMER
CHEMISTRY
2C02CHE/PCH : Chemistry (For Physical and Biological Science)

Time : 3 Hours

Max. Marks : 32

SECTION – A

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

1. Write the equation that relates Kp and Kc.

2. Write the expression for the equilibrium constant for the reaction
$\frac{1}{2}N_2(g) + \frac{1}{2}O_2(g) \rightleftharpoons NO(g)$.

3. What is meant by Quantum yield ?

4. Write one example for emulsion.

5. Define molality.

(5×1=5)

SECTION – B

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

6. What are the different types of bond fission ? Write one example for each.

7. What is Law of mass action ? Write its mathematical expression for a general
reaction $aA + bB \rightleftharpoons cC + dD$.

8. Draw the structure of the following compounds :
   a) 3-methyl 1-pentene.
   b) 2,4-dimethyl hexane.

P.T.O.

---

9. What is Beer-Lamberts Law ? Write down the equation for absorbance.

10. Calculate the normality of the oxalic acid solution obtained by dissolving 63g
in 500ml water.

11. Briefly explain the electrochemical method of analysis.

(4×2=8)

SECTION – C

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

12. Explain the hybridization and shape of methane and ethylene.

13. Write a note on photosensitization and quenching.

14. Discuss the classification of colloids.

15. Explain the flocculation value and gold number.

16. Discuss the classification of errors.

(3×3=9)

SECTION – D

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

17. Explain Huckal rule aromaticity with suitable examples including benzenoid and
non-benzenoid aromatic systems.

18. What is Le-Chatlier principle ? Explain how it can be applied in the synthesis
of ammonia according to the following reaction $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$,
$\Delta H = -92.4 KJ/mol$.

19. Explain the properties and application of colloids.

20. Explain the principle of dichrometry, iodometry and iodimetry titrations. (2×5=10)