



K24U 0020

Reg. No. :

Name :

**Sixth Semester B.Sc. Degree (CBCSS – OBE – Regular/Supplementary/
Improvement) Examination, April 2024
(2019 to 2021 Admissions)
CORE COURSE IN CHEMISTRY/POLYMER CHEMISTRY
6B15CHE/PCH : Physical Chemistry – III**

Time : 3 Hours

Max. Marks : 40

SECTION – A

(Very short answer type. **Each** carries 1 mark. Answer **all 4** questions)

1. State Faradays Law of electrolysis.
2. Define pH.
3. Define electrochemical series.
4. Define quantum yield.

(4×1=4)

SECTION – B

(Short answer type. **Each** carries 2 marks. Answer **any 7** questions)

5. Explain activity and activity coefficient.
6. Explain Debye-Huckel limiting law.
7. What is the ionic product of water ?
8. Define Buffer capacity.
9. What is a calomel electrode ?
10. What is dropping mercury electrode ?

P.T.O.

K24U 0020



11. Distinguish between order and molecularity.
12. Define consecutive reaction with example.
13. What is Arrhenius equation ? Explain its terms.
14. Define photosensitization reaction with example.

(7×2=14)

SECTION – C

(Short essay type. **Each** carries 3 marks. Answer **any 4** questions)

15. Explain the determination of transport number by Hittorf method and moving boundary methods.
16. Define Buffer index. Derive Henderson equation for the pH of basic buffer.
17. What are concentration cell ? How are they classified ?
18. Discuss the hydrocarbon-oxygen fuel cell.
19. Explain Lindemanns theory of unimolecular reactions.
20. Explain photocolormeter.

(4×3=12)

SECTION – D

(Long essay type. **Each** carries 5 marks. Answer **any 2** questions)

21. Explain Kohlrauschs law and its application.
22. a) Explain quinhydrone and glass electrode.
b) What are its advantages and disadvantages ?
23. What are the applications of potentiometric measurements ?
24. a) Derive integrated rate equation for second order reaction.
b) Explain the Lindemanns mechanism of unimolecular reaction.

(2+3)

(3+2)

(2×5=10)