



K20U 0298

Reg. No. : .....

Name : .....

**II Semester B.Sc. Degree (CBCSS-Supplementary/Improvement)**  
**Examination, April 2020**  
**(2014-2018 Admissions)**  
**COMPLEMENTARY COURSE IN CHEMISTRY**  
**2C02 CHE : Chemistry for Physical and Biological Sciences**

Time : 3 Hours

Max. Marks : 32

**SECTION – A**

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

1. Define common ion effect.
2. State Le Chatlier principle.
3. What are protective colloids ?
4. Write the unit of rate constant for a second order reaction.
5. Define quantum yield.

(5×1=5)

**SECTION – B**

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

6. What are pseudo order reactions ? Give two examples.
7. Why is chemical equilibrium called dynamic ?
8. Write the balanced equation for the titration of  $\text{KMnO}_4$  with Mohrs salt.
9. What are the characteristics of a catalysed reaction ?
10. Distinguish between chemical and photochemical reaction.
11. Calculate the pH of 0.01 M NaOH and 0.02 M  $\text{H}_2\text{SO}_4$ .

(4×2=8)

P.T.O.



## SECTION – C

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

12. Explain the methods for determining order of a reaction.
13. What are buffer solutions ? Derive Hendersons equation for the buffer solution.
14. Give an account of electrical double layer.
15. Explain phosphorescence.
16. Explain the conditions that favour the formation of  $\text{NH}_3$  in the following equilibrium  $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$ . (3×3=9)

## SECTION – D

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

17. Explain the applications of colloids in medicine and industry.
18. a) Explain thermodynamic derivation of chemical equilibrium.  
b) Explain Growthus Draper law. (3+2)
19. a) Discuss the collision theory.  
b) Explain the theory of heterogenous catalysis. (3+2)
20. Discuss the classification of errors. How are errors minimized ? (2×5=10)