



M 8864

Reg. No. :

Name :

II Semester B.Sc. Degree (CCSS – 2014 Admn. – Regular)
Examination, May 2015
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. State law of mass action.
2. Give an example of photo sensitized reaction.
3. State Hardy Schulz rule.
4. What are buffer solutions ?
5. What are pseudo unimolecular reactions ? (1×5=5)

SECTION – B

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

6. The half life of a first order reaction is 8 minutes. How long will it take to reduce the concentration to 1% of initial value ?
7. Explain Grothus Draper law.
8. What are the limitations of Beer-Lamberts law ?
9. Explain the effect of pressure on the equilibrium.
$$\text{PCl}_5 \rightleftharpoons \text{PCl}_3 + \text{Cl}_2$$
10. What are protective colloids ? Give one example.
11. What is activation energy ? (2×4=8)

P.T.O.



SECTION – C

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

12. What are the general characters of a catalytic reaction ?
13. Why is chemical equilibrium called dynamic ?
14. Explain the term electrical double layer.
15. Discuss the photochemistry of $H_2 - Cl_2$ reaction.
16. Write a note on determinate errors.

(3×3=9)

SECTION – D

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

17. a) Derive integrated rate equation for a first order reaction. $2\frac{1}{2}$
- b) Explain the graphical method for determining order of reaction. $2\frac{1}{2}$
18. a) Explain the principles involved in cation analysis. **3**
- b) Discuss the principle involved in iodometric titration. **2**
19. a) Give an account of kinetic and optic properties of colloids. **3**
- b) How are colloids useful in industry ? **2**
20. a) Derive the relation between K_p and K_c . **3**
- b) At $500^\circ C$ the reaction between N_2 and H_2 to form NH_3 has $K_c = 6.0 \times 10^{-2}$.
What is the value of K_p for the reaction. **2**

(5×2=10)