Mangala

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 ?

   0.087 , 52.9 m.
7. Explain Grothus Draper law.
8. What are the limitations of Beer-Lamberts law ?
9. Explain the effect of pressure on the equilibrium.

   PCl_5 $PCl_3 + Cl_2$ P↑ back ward.
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. **$2^1/_2$**

    b) Explain the graphical method for determining order of reaction. **$2^1/_2$**

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 Kp and Kc. **3**

    b) At 500°C the reaction between N_2 and H_2 to form NH_3 has $Kc = 6.0 \times 10^{-2}$. What is the value of Kp for the reaction. **2**

(5×2=10)