K20U 0298

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.

SECTION – B

(5×1=5)

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 $KMnO_4$ 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 H_2SO_4.

(4×2=8)

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 NH_3 in the following equilibrium $N_2 + 3H_2 \rightarrow 2NH_3$.

$(3\times3=9)$

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 ?

$(2\times5=10)$

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