K24U 1609

Second Semester B.Sc. Degree (CBCSS – OBE-Regular/Supplementary/ Improvement) Examination, April 2024
(2019 Admission Onwards)
COMPLEMENTARY ELECTIVE COURSE IN CHEMISTRY/POLYMER CHEMISTRY
2C02CHE/PCH : Chemistry (For Physical and Biological Science)

Time : 3 Hours

Max. Marks : 32

SECTION – A

Very short answer type. **Each** carries **1** mark. Answer **all 5** questions.

1. What is meant by Quantum yield ?

2. Write one example for emulsion.

3. Write down the expression for Kc.

4. Define chemical equilibrium.

5. Define the term normality. **(5×1=5)**

SECTION – B

Short answer type. **Each** carries **2** marks. Answer **any 4** questions out of 6.

6. Explain the terms chemiluminescence and bioluminescence.

7. Define solubility product and ionic product.

8. What is the Law of mass action ? Write its mathematical expression for a general reaction.

    $aA + bB \rightleftharpoons cC + dD$

9. What are the different types of bond fission ? Write one example for each.

10. Draw the structure of the following compounds

    a) 2-ethyl 1-pentene

    b) 2,4-dimethyl hexane.

11. Calculate the normality of the oxalic acid solution obtained by dissolving 0.63 g in 100 ml water. **(4×2=8)**

SECTION – C

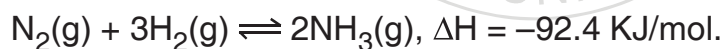Short essay type. **Each** carries **3** marks. Answer **any 3** questions out of **5**.

12. Write a note on photosensitization and quenching.

13. Explain the flocculation value and gold number.

14. What is the Hardy-Schultz rule ? Illustrate with example.

15. Explain Huckel's rule of aromaticity with examples.

16. Discuss the classification of errors.   **(3×3=9)**

SECTION – D

Long essay type. **Each** carries **5** marks. Answer **any 2** questions out of 4.

17. a) What is meant by homologous series ? Give suitable examples to illustrate this.

    b) Explain the hybridization and shape of ethylene and acetylene.

18. What are emulsions ? Explain different types of emulsions, emulsifying agents and their application.

19. Explain the principle of dichrometry, iodometry and iodimetry titrations.

20. What is Le-Chatlier principle ? Explain how it can be applied in the synthesis of ammonia according to the following reaction.

    $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$, $\Delta H = -92.4$ KJ/mol.   **(2×5=10)**

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