K24U 1609

Reg. No. : .....

Name : .....

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)

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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)