B.Sc. DEGREE EXAMINATION,APRIL 2020
I Year I Semester
Allied Chemistry - I

Time : 3 Hours **Max.marks :60**

Section A $(10 \times 1 = 10)$ Marks

Answer any **TEN** questions

1. What are buffer solutions?
2. Define pH of a solution.
3. Give examples for strong and weak electrolytes.
4. Mention the disadvantages of hard water.
5. What are mixed fertilizers?
6. Mention the hybridisation of carbon in benzene and acetylene.
7. Define nucleophiles. Cite an example.
8. What are heterocyclic compounds? Give an example.
9. Write the equation for Chichibabin reaction.
10. Define quantum yield of a reaction.
11. Why photosynthesis is considered as a photochemical reaction?
12. Write the mechanistic steps for H2-Cl2 reaction.

Section B $(5 \times 4 = 20)$ Marks

Answer any **FIVE** questions

13. Write the importance of buffer solutions in biological systems.
14. Explain temporary and permanent hardness of water.
15. Write the composition and uses of the following.
    (a) Water gas (b) Semi-water gas
16. Explain the mechanism of sulphonation of benzene.
17. Discuss the hybridisation of carbon in ethylene.
18. Compare any two properties of pyrrole and pyridine.
19. State the following laws of photochemistry.
    (a) Grotthus-Draper law (b) Stark Einstein law

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. (a) Write Henderson equation for determining pH of a buffer solution and mention the terms in it. (b) Explain common ion effect.
21. (a) Write the preparation and uses of ammonium sulphate and triple super phosphate. (b) Write the principle of reverse osmosis. Mention its significance.
22. Explain the classification of organic reactions with relevant examples.
23. Discuss any two preparation and three properties of furan and thiophene.
24. Define the following. (a) Phosphorescence (b) Fluorescence
(c) Chemiluminescence (d) Photosensitisation

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