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E – 1648

Sixth Semester B.Sc. Degree Examination, April 2018
First Degree Programme Under CBCSS
CHEMISTRY
Core Course – X
CH 1641 : Organic Chemistry – II
(2013 Admission Onwards)

Time : 3 Hours

Max. Marks : 80

SECTION – A

Answer **all** questions. Answer in **one** word to **maximum two** sentences. **Each** question carries **one** mark :

1. Draw the Zwitter ion form of glycine.
2. What is the product obtained when phenol is treated with Con.HNO_3 ?
3. What is the action of heat on anthranilic acid ?
4. Give any one method of preparation of coumarin.
5. What is the product of the reaction $2CH_3CHO \xrightarrow{OH-} ?$
6. What are anomers ?
7. What is the product obtained when glucose is acetylated ?
8. What is a prosthetic group ?
9. Give an example for a synthetic detergent.
10. What is special isoprene rule ?

(10×1=10 Mar

SECTION – B

Short answer type. Answer **any 8** questions from the following. **Each** question carries **two** marks.

11. Phenol is a weaker acid than acetic acid. Explain.
12. Give any one method of preparations of catechol.

13. What happens when $CH_3CH=CH-CHO$ is reduced with $NaBH_4$?

14. Why is the α-hydrogen in aldehydes and ketones acidic.

15. How will you obtain cinnamic acid by knoevenagel reaction ?

16. Why are carboxylic acids much stronger than alcohols ?

17. What are epimers ? Give an example.

18. Draw the Haworth ring structure of α-D fructose.

19. What is denaturation of proteins ?

20. Write a note on stereochemistry of amino acids.

21. Write a note on chemistry of vision.

22. What is genetic code ? **(8×2=16 Marks)**

SECTION – C

Short essay type. Answer **any 6** questions from the following.
Each question carries **four** marks.

23. What is Fries rearrangement. Explain the mechanism.

24. Explain the preparation and use of :
    i) Picric acid
    ii) Resorcinol
    iii) Quinol.

25. What is witting reaction ? Explain the mechanism.

26. Explain with mechanism the oxidative cleavage of diols using lead tetra acetate and periodic acid reagent.

27. How is salicylic acid prepared ? How would you convert it into :
    a) Phenol
    b) Benzoic acid
    c) Aspirin.

28. Explain the preparation, properties and structure of cellulose and starch.

29. Explain Sheehan method of peptide synthesis.

30. What is Wolff-Kishner reduction ? Give its mechanism.

31. Explain the classification of vitamins and represent the structure of vitamins A, B_1 and C. **(6x4=24 Marks)**

SECTION – D

Answer **any 2** questions. **Each** question carries **15** marks.

32. Explain the mechanism of following reactions :
    i) Aldol condensation
    ii) Perkin reaction
    iii) Knoevenagel condensation
    iv) Wolff-Kishner reduction.

33. Explain elaborately, the structure of glucose.

34. Explain elaborately, the structure elucidation and extraction of nicotine.

35. a) Explain any two, preparation and uses of :
        i) Salicyclic acid
        ii) Tartaric acid
        iii) Anthranilic acid
        iv) Citric acid.
    b) Explain :
        i) Structure of RNA and DNA
        ii) Replication of DNA. **(15x2=30 M**