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C – 1381

Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree Examination, April 2017
First Degree Programme under CBCSS
CHEMISTRY
Core Course XI
CH 1642 – Organic Chemistry – III
(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. What is Zieglar – Natta Catalyst ?
2. Give the Chemical name and structure of aspirin.
3. Write the structure of sulphadiazine.
4. What is Hinsberg reagents ?
5. Electrophilic substitution in pyridine is slower than in benzene. Why ?
6. What is meant by finger print region ?
7. What is PMMA ? Give one use of it.
8. Draw the spin-spin splitting pattern in high resolution NMR spectrum of ethanol.
9. Arrange the following in increasing order of basic strength.
   $CH_3 \cdot NH_2$, $(CH_3)_2$ NH, NH_3, $(CH_3)_3N$
10. Thiophene does not behave like thioether. Why ?

(10×1=10 Marks)

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SECTION – B

(Short answer type questions. Answer **any 8** questions. **Each** question carries **two** marks.)

11. Explain the term weight average molecular mass of a polymer.

12. How will you manufacture pyrrole ?

13. What is meant by bathochromic shift and hypsochromic shift ?

14. Give the structure and name of compound formed by the following reactions.

    a) Pyrrole + $CHCl_3$ + KOH $\rightarrow$

    b) Thiophene + CH_3COCl in presence of $SnCl_4$ $\rightarrow$

15. Write down the coupling reaction with aniline.

16. What is Chichibabin reaction ?

17. Give any four differences between addition polymers and condensation polymers.

18. What are the applications of IR spectroscopy ?

19. Give the preparation of phenolphthalein.

20. Write the IUPAC name of

    a) Indole b) Quinoline.

21. How many groups of non-equivalent protons can be identified in PMR of $CH_2 = C(Cl) - CH_3$. Give the ratio of number of protons in each group.

22. What is Mclafferty rearrangement ?

(8×2=16 Marks)

SECTION – C

(Short essay type questions. Answer **any 6** questions. **Each** question carries **four** marks).

23. Account for the fact that electrophilic substitutions in pyridine ring take place at 3-position while nucleophilic attack is at 2-position.

24. How will you convert

    a) Furan to furfural b) Pyrrole to 3-methylpyrrole

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25. Write a note on Biodegradable polymers.

26. Give the synthesis of methyl orange. Explain its use.

27. Explain spin-spin splitting with a suitable example.

28. Why nitromethane is acidic ?

29. Why TMS is chosen as the reference in NMR-spectroscopy ?

30. Explain with equation Hoffmann's mustard oil reaction.

31. What are Schiff's bases ? Give one preparation and uses of it. **(6×4=24 Marks)**

SECTION – D

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

32. a) Explain the action of alkaline $KMnO_4$ on quinoline and Isoquinoline.
    b) Write a note on synthetic detergent and detergent action.
    c) Explain the reduction of nitrobenzene in acid, base and neutral medium.

33. a) Discuss the aromaticity in Thiophene.
    b) Explain Reimer-Tieman reaction using an example and equation.
    c) How will you convert m-nitroaniline to m-aminochlorobenzene ?

34. a) How will you separate P/S/T amines by Hinsberg method ?
    b) What are dyes ? How are they classified based on their appplications ?

35. a) Explain the Skraup synthesis of quinoline.
    b) Explain the uses of sulpha drugs in medicine.
    c) Explain Benzidine rearrangement. **(2×15=30 Marks)**

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