Reg. No..... Name:..... **U229**

BSc DEGREE END SEMESTER EXAMINATION APRIL - 2015

SEMESTER -2: CHEMISTRY (COMPLEMENTARY)

COURSE: U2CPCHE2 – BASIC ORGANIC CHEMISTRY

Time: 3 Hours Max.Marks:75

Part A

Answer **all** questions. Each question carries 1 mark.

1. ------ is obtained by the condensation polymerization of phthalic acid and ethylene glycol.
2. The monomer of Teflon is -------
3. The carbene involved in the carbylamines reaction is -------
4. The positively charged carbon in a carbocation is --------- hybridized.
5. The most stable conformation of ethane is the --------- conformation.
6. The major product of the dehydrohalogenation of 2-bromo pentane is ---------
7. Which among the following possess a non zero dipole moment. A. H_2O B. CH_4 C. CO_2 D. BF_3
8. Which among the following is most basic? A. NH_3 B. CH_3NH_2 C. $(CH_3)_2NH$ D. $(CH_3)_3N$

(1 x 8 = 8)

Part B

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

9. Explain the term heterolysis.
10. Defignhyperconjugation.
11. Which is stronger acid – acetic acid or dichloro acetic acid? Justify your answer.
12. What is meant by peroxide effect?
13. Which rotation can be assigned to trans-1,2dichloroethene – E or Z ? Explain.
14. Draw the conformations of propane. Which is more stable?
15. What are elastomers?
16. Draw the Fischer projections of the optical isomers of 2- chloro butane.

(2 x 6 = 12)

PART C

Answer any **four** questions. Each question carries 5 marks.

17. What is Ziegler – Natta catalyst? Give a polymerization reaction where it is used as a catalyst. List out the uses of the polymer thus obtained.
18. Draw and label the (i) Sawhorse (ii) Newman and conformers of ethane (iii) Chain conformation of cyclohexane.
19. An aqueous solution of an optically active substance containing 30g. of the substance per litre, shows an optical rotation of + 1.20°for sodium D-line at 293 K in a 5cm. polarimeter tube. Calculate the specific rotation of the enantiomers.
20. Describe the environmental hazards of polymers. What is the scope of biodegradable polymers?
21. Which is the major product when HBr adds to 2 – methyl propene? Which is the rule behind this and explain it with mechanism.
22. What is mesomeric effect? Explain why NO_2 group show -- M effect where as OH group +M effect.

(5 x 4 = 20)

PART D

Answer any **two** questions. Each question carries 10 marks.

23. Discuss and illustrate the significance of the various electron displacement effects in organic molecules.
24. Discuss addition and condensation polymerization with examples.
25. Give an example each of E1 and E2 reactions and explain their mechanism.
26. Discuss the geometrical isomerism in alkenes with 2 – butene as example. Also arrive at the E & Z configuration of 2 – butene.

(10 x 2 = 20)

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