15U229

Reg. No..... Name:.....

BSc DEGREE END SEMESTER EXAMINATION MARCH 2016

(2015 Admission)

SEMESTER – 2: COMMON FOR PHYSICS / BOTANY / ZOOLOGY

COURSE: 15U2CPCHE2 - BASIC ORGANIC CHEMISTRY

Time: Three Hours Maximum Marks: 60

Part A

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

1. 2-Butene exhibits ..... isomerism.
2. Melting point of maleic acid is ..... than fumaric acid.
3. The number of optical isomers possible for a molecule having three chiral carbons is ....
4. The type of hybridization involved in ethyne is .....
5. Acetylene molecule contains ..... *sigma* bonds and ..... *pi* bonds.
6. Among halides ..... shows maximum inductive effect.
7. ..... is all *cis*-polyisoprene.
8. ..... polymer is used to make non-stick cookware.

(1 x 8 = 8)

Part B

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

9. What is the use of fractional distillation during the purification of organic compounds?
10. Differentiate between configuration and conformation.
11. What is meant by *meso* compound? Give one example.
12. Draw the most stable and least stable conformations of n-butane.
13. Which is more acidic, chloroacetic acid or fluoroacetic acid? Why?
14. What is Saytzeff's rule?
15. Differentiate between electrophile and nucleophile with examples.
16. What is vulcanization?

(2 x 6 = 12)

Part C

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

17. What are geometrical isomers? How can we distinguish geometrical isomers from their physical properties?
18. Discuss the optical isomerism observed in lactic acid.
19. Explain how the nature of alkyl groups and solvents affect the rate of S_N1 and S_N2 reactions.
20. Discuss the mechanism of nitration of benzene.
21. With suitable examples, differentiate addition and condensation polymerization.
22. Distinguish between (A) homoplymer and copolymer (B) Buna-S and Buna-N rubber.

(5 x 4 = 20)

Part D

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

23. A) Discuss briefly about the purification techniques sublimation and crystallization

    B) Write a short note on the conformational analysis of cyclohexane
24. A) Explain the hybridization of ethylene molecule

    B) Differentiate homolytic and heterolytic bond fission. Discuss the stability of primary, secondary and tertiary carbocations.
25. A) Discuss briefly the E1 and E2 mechanism of elimination reactions with examples.

    B) Explain Markownikoff's rule with suitable examples
26. A) Write a short note on the synthesis and applications of (i) PVC, (ii) nylon 6 (iii) neoprene (iv) phenol-formaldehyde resin

(10 x 2 = 20)

****