K15U 0244

Reg. No. : .....

Name : .....

III Semester B.Sc. Degree (CCSS – 2014 Admn. – Regular) Examination, November 2015
Complementary Course in Chemistry
3C03 CHE (BS) : CHEMISTRY (For Biological Science)

Time : 3 Hours

Max. Marks : 32

SECTION – A

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

1. Define specific rotation.
2. What is meant by effective atomic number ?
3. What are open and closed systems ?
4. Give the structure of the monomer of natural rubber.
5. What are the functional groups present in carboxylic acid and amide. **(5×1=5)**

SECTION – B

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

6. Draw the conformations of ethane. Which is more stable ? Why ?
7. Explain the structure of ethane.
8. Give two examples each for ortho-para directing and meta directing group.
9. What is Bakelite ? How is it prepared ?
10. Write Gibbs-Helmholtz equation. What is its significance ?
11. What are inner orbital and outer orbital complexes ? **(4×2=8)**

P.T.O.

SECTION – C

Answer **any three** questions. **Each** question carries **3** marks.

12. Discuss the structure of benzene.

13. What are the differences between SN^1 and SN^2 reactions.

14. What are the postulates Werners coordination theory.

15. Give any three applications of coordination compounds.

16. Explain optical isomerism taking tartaric acid as example. **(3×3=9)**

SECTION – D

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

17. Discuss the various electron displacement effects in organic molecules. **5**

18. a) Explain the geometrical isomerism of 2-butene. **2**

    b) What are the various methods for the resolution of racemic mixture ? **3**

19. a) What are synthetic fibres ? How are the following prepared ?

    i) Nylon 66 ii) Terylene. **3**

    b) What are the differences between thermoplastic and thermosetting plastic ? **2**

20. a) State and explain second law of thermodynamics. How is it helpful in determining the direction of spontaneous process ? **3**

    b) The enthalpy of fusion of ice at 273 k 335J/gm. Calculate the entropy of fusion. **2**

(2×5=10)