S. NO: 440   BATCH: 87 – 2016   Reg. No.:

END OF SEMESTER EXAMINATIONS, APRIL / MAY – 2017
GENERAL CHEMISTRY - I
SUBJECT CODE : 11UACH01

MAJOR : B.Sc (Chemistry)   SEMESTER   : I
TIME   : 3 HOURS   MAX. MARKS: 75

SECTION – A (10 X 1 = 10)

Answer the Following:

1. Write the Hybridization of methane.
2. What is EDTA?
3. Define Electrophiles.
4. Formic acid is stronger than acetic acid. Why?
5. What is Markovinikoff's rule?
6. Give an example for conjugated dienes.
7. What is meant by binding energy?
8. Define Isotopes.
9. Write the mathematical expression of first law thermodynamics.
10. Define Isothermal process.

SECTION – B (5 X 4 = 20)

Answer the Following:

11. a) Compare MOT and VBT.
    [OR]
    b) What are Insulators? Give examples.
12. a) Explain Mesomeric effect with example.
    [OR]
    b) Distinguish between Homolytic and Heterolytic fission.
13. a) Explain Diels – Alder reaction.
    [OR]
    b) Describe the Allylic substitution by NBS.
14. a) What are nuclear fission and fusion reactions?
    [OR]
    b) Explain n/p ratio.
15. a) State and explain Zeroth law of thermodynamics.
    [OR]
    b) Derive Kirchoff's equation.

SECTION – C (5 X 9 = 45)

Answer the Following:

16. a) On the basis of Hybridization discuss the shapes of BF_3, PCl_5 and SF_6 molecules.

    [OR]

    b) Discuss the precipitation titration and complexometric titration with suitable examples.

17. a) i) Explain +I and –I effect with example.   (5 Marks)

    ii) Discuss the stability of free radicals. (4 Marks)

    [OR]

    b) Describe Hyper conjugative and Electromeric effect with suitable examples.

18. a) Describe Bayer's strain theory.

    [OR]

    b) Explain the following reactions

       i)   Ozonolysis   (3 Marks)
       ii) Hydroboration   (3 Marks)
       iii) Hydroxylation   (3 Marks)

19. a) How will you determine the dipole moment of polar gases and liquids?

    [OR]

    b) Discuss the synthesis of artificial radio isotopes.

20. a) State and explain Hess's law of heat summation. Give its applications.

    [OR]

    b) Write notes on

       i)   State function   (3 Marks)
       ii) Path function   (3 Marks)
       iii) Exact and inexact differentials   (3 Marks)

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