* S - 3 4 8 3 / 1 0 0 *

S-3483

M. Sc. (Part - I) (Sem. I) (SF) (IC/PC/EC) Examination

March / April – 2011

ORGANIC CHEMISTRY : Paper - II

Time : **3** Hours] [Total Marks : **70**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ M. Sc. (PART - 1) (SEM. 1) (SF) (IC/PC/EC)

Name of the Subject :

☛ ORGANIC CHEMISTRY - 2

☛ Subject Code No. : 3 4 8 3 ☛ Section No. (1, 2,.....) : NIL

Seat No. :

Student's Signature

(2) Figures to the **right** indicate full marks of the questions.

1 Answer any **three** of the following : **18**

(a) What is racemates ? Give any four methods for resolution of racemates.

(b) Discuss the Fischer, Newman and sawhorse projections in ethane and butane.

(c) Explain optical activity of biphenyls,allenes and spiranes.

(d) What is conformational analysis ? Discuss the conformation analysis in cyclohexances.

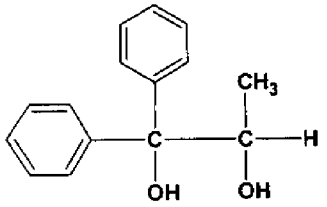
2 Answer any **three** of the following :- **18**

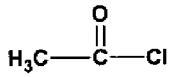
(a) What are free radicals ? Give the methods of formation of short -lived free radicals.Discuss the stability of triarylmethyl radical.

(b) What are carbenes ? Give different methods of generation of singlet carbenes. Discuss the role of carbene in Arndt-Eistert synthesis.

(c) What are carbanions ? Describe different methods of formation of carbanions. Describe the role of carbanion in Favorskii rearrangement.

(d) Give end product (s), suitable reagent and mechanism with explanation of the following reactions :

(i) 

(ii) 

3 Answer any **three** of the following : 18

(a) What are elimination reactions ? Explain the mechanism of Shapiro reaction.

(b) Explain the dehalogenation of vicinal halides.

(c) What is Friedal craft's reaction ? Explain the mechanism of FC reaction in the formation of acetophenone, Benzophenone and Ethylbenzene.

(d) What is aromatic electrophilic substitution reaction ? Discuss the nitration process with mechanism.

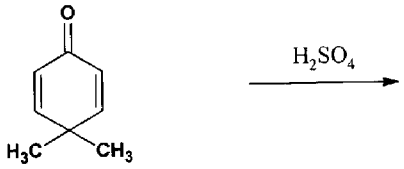
4 Answer any **four** of the following :- 16

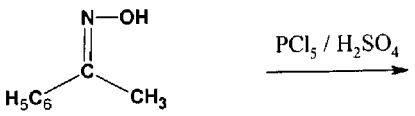
(a) What is prochirality ? Explain the prochirality in 1,3-propane diol and prochiral relationship between ethanol and acetadehyde.

(b) What are nitrenes ? Give different methods of generation of nitrenes. Discuss the role of nitrene in Hoffmann's bromide rearragement.

(c) What are carbocations ? Describe the role of carbocation in Wagner-Meerwein rearrangement.

(d) Give end product (s), mechanism and name of the rearrangement with brief explanation :

(i) 

(ii) 

(e) Give the mechanism of the following reactions with brief explanation :

(i) Perkin reaction

(ii) Knoevenagel condensation