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SB-2702

M. Sc. (Part - I) (Sem. - II) Examination

March/April - 2011

Organic Chemistry : Paper - II

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

नीचे दृशावेक निशानीवाणी विगतो छत्तरवही पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No.:
Name of the Examination :	<input type="text"/>
← M.Sc. (Part - I) (Sem. - 2)	<input type="text"/>
Name of the Subject :	<input type="text"/>
← Organic Chemistry - 2	<input type="text"/>
← Subject Code No. : <input type="text" value="2"/> <input type="text" value="7"/> <input type="text" value="0"/> <input type="text" value="2"/> ← Section No. (1, 2,.....): <input type="text" value="NIL"/>	<input type="text"/>
	Student's Signature

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

(3) Answer written first will be examined.

1 Give mechanism and a synthetic application of any three of the following : 18

- (a) Arndt-Eistert Synthesis
- (b) Dakin Reaction
- (c) Leukart's Reaction
- (d) Michael Reaction
- (e) Wittig Reaction.

2 (a) Discuss SN^1 aliphatic nucleophilic substitution reaction mechanism. 6

OR

- (a) Discuss $ArSN^1$ aromatic nucleophilic substitution reaction mechanism. 6
- (b) Discuss nucleophilic substitution reaction of allylic halides. 6

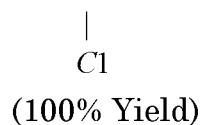
OR

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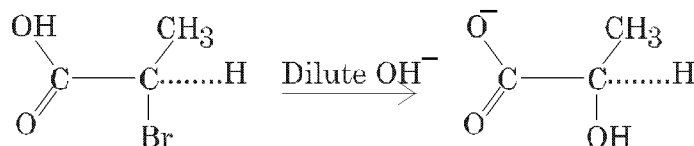
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- (b) Explain the substitution reaction mechanism of 6
 $H_3C - CH = CH - CH_2OH + SOCl_2 \rightarrow H_3C - CH - CH = CH_2 + SO_2$



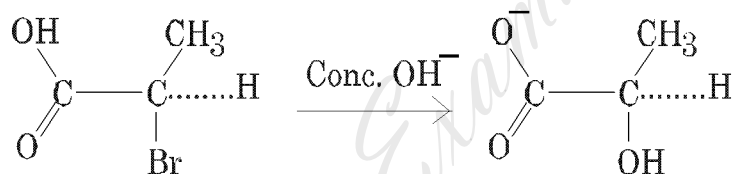
- (c) Explain the following S_N^2 reaction. 6



(R)-2 - Bromo -
propanoic acid

(R) - Lactate anion

OR

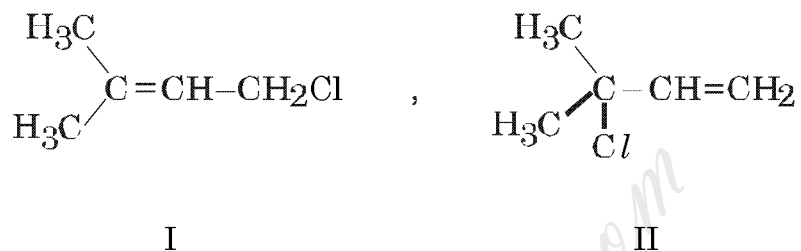


(R)-2 - Bromo -
propanoic acid

(R) - Lactate anion

- 3 Answer any **three** of the following : 18
- (a) Discuss Curtin-Hammett principle. 6
- (b) Explain the reaction of 1,3-butadiene (0.03 M) with HBr (0.03 M) gives 1,2-addition product at minus (−) 80°C and 1,4-addition product of plus (+) 40°C. 6
- (c) Discuss thermodynamic and kinetic controlled reaction of Naphthalene and concentrated H_2SO_4 (d 1.84), a chemical reaction conducted at 80°C and at 160°C. 6
- (d) Discuss quantitative relationships between molecular structure and chemical reactivity of Hammett equation. 6
- (e) Discuss quantitative relationships between molecular structure and chemical reactivity of Taft equation. 6

- 4 Answer any **four** of the following : 16
- (a) Give primary kinetic isotope effect on oxidation reaction of 2-propanol with acidic $K_2Cr_2O_7$. 4
- (b) Discuss S_N^1 and S_N^2 reaction mechanisms involved in solvolysis of 2-bromopropane. 4
- (c) Give hydrolysis of following isomeric allyl chloride (I, II)



gives a mixture of 85% tertiary alcohol and 15% primary alcohol.

- (d) Discuss Von Richter Rearrangement reaction. 4
- (e) Discuss Sommelet-Hauser Rearrangement reaction. 4
- (f) Discuss Smiles Rearrangement reaction. 4
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