

中国科学院大学硕士研究生入学考试

1
2
3
4
2
1

中国科学院大学

4	
5	
1	: s p sp^3, sp^2, sp ,
2	/
3	
4	
6	
1	
2	$^1\text{H-NMR}$ $^{13}\text{C-NMR}$ (IR)
	(UV-vis) (MS)
3	
7	N S O
8	
9	

2.2

2.3

2.4 (enantiomers)

(Chiral)

2.5

a)

Fischer

b)

R/S

D/L

c)

d)

2.6

N, S

2.7

3.1

3.1.1

max

3.1.2

:

3.2

3.2.1

3.2.2

3.2.3

3.3

3.3.1

,

3.3.2

3.3.3

3.4

3.4.1

3.4.2

3.4.3

4.1

sp^3

4.2

4.3

4.4

4.5

a

e

/

5.1

5.1.1

sp^2

5.1.2

/

Z/E

5.1.3

5.2

1,4-Markovnikov
Diels-Alder

5.2.1

HX[

]

H₂SO₄

X₂

H₂O

HOCl

5.2.2

5.2.3	
5.2.4	-
5.2.5	
5.3	
5.3.1	
5.3.2	
5.3.3	
5.3.4	
5.4	1,3-
5.4.1	
5.4.2	1,2 1,4- -
5.4.3	Diels-Alder
6.1	sp
6.2	H
6.2.1	
6.2.2	X ₂ HX H ₂ O HCN HOCl
6.2.3	
6.2.4	() - K Na
6.2.5	Li
6.3	
7.1	
7.2	
7.2.1	(C ⁺) (Walden)

7.2.2

7.2.2.1

7.2.2.2

Zaitsev

7.2.2.3

Grignard

Wurtz

(coupling reaction)

7.2.3

7.2.3.1

S_N1 S_N2

E1 E2

Winstein

7.2.3.2

7.2.3.3

7.2.3.4

7.3

7.4

Lucas

8.1

8.1.1

Cu(OH)₂ HIO₄

pinacol

8.1.2

a) -

E1 E2

b) -

8.1.3

KMnO₄ MnO₂

Oppenauer

Pfitzner-Moffatt

8.1.4

8.1.5

8.2

8.2.1

8.2.2

Williamson

-

8.2.3

1,2-

()

8.2.4

8.3

8.3.1

8.3.1.1

Claisen

Fries

FeCl_3

8.3.1.2

Friedel-Crafts

Reimer-Tiemann

Kolbe-Schmitt

Birch

8.3.1.3

8.3.2

8.3.3

Bucherer

8.3.4

8.3.4.1

8.3.4.2

8.3.4.3

Fe(III)

9.1

9.1.1

HCN NaHSO_3 RSH RMgX

ROH H_2O

9.1.2

-

9.1.3

a) Tollens Fehling
b) H_2 LiAlH_4 NaBH_4 B_2H_6 Me_2CHOAl Zn/Hg/H^+ $\text{NH}_2\text{NH}_2/\text{KOH}$
Clemmensen

Wolff-Kishner - Huang Minlon

c) Cannizzaro

9.1.4 Beckmann Favorski

Baeyer-Villiger

9.1.5

9.1.6 Schiff

9.2

9.3

[Bechmann]

9.4

, -

1,4-

Michael

10.1

10.2

10.3

10.4

-H

10.5

10.6

Hoffmann

10.7

a)

b)

c)

10.8

10.9

10.10

11.1

11.2

11.2.1

11.2.2

Hofmann

11.2.3

Hinsberg

11.2.4

Cope

11.2.5

Tiffeneau-Demjanov

11.2.6

Mannich

11.3

Gabriel

(/Leuckart

/Eschweiler-Clarke

) (Hofmann

Curtius

Schmidt)

11.4

EDTA

11.5

11.5.1

11.5.2 H OH X CN

11.5.3

11.6

11.6.1

11.6.2

-

11.6.3

TNT

11.7

11.8

11.8.1

11.8.2

11.8.3

11.8.4

sp^2

12.1

12.1.1

Kekulé

12.1.2

12.1.3

12.1.3

12.1.3.1

Friedel-Crafts

-

12.1.3.2

Cl

,

(Gatterman)-

(Koch)

12.1.3.3

Birch

12.1.3.4

12.1.3.5

12.2

12.2.1

12.2.2

12.2.3

9 10

12.2.4

12.3

12.4	Hückel	
13.1	:	
13.2		
13.3		
13.4		
13.5		Vilsmeier-Haack
13.6	(S_N1Ar)	S_N1Ar
13.7	Wallach	
13.8		
13.9		
14.1		
14.2		
	;	
14.3	VB_1	VB_{12}
14.3.1	VB_6	
14.3.2		
14.4		Skraup

D

15.1

15.1.1 [Haworth
]
15.1.2
Ruff Wohl
15.1.3
15.1.4
15.2
15.3

16.1 Strecker -
Gabriel

18.1

18.2

18.3

Wittig

18.4

18.5

19.1

Robinson

Mannich

Micheal

19.2

Dieckmann

19.3

19.4 -

1,3-

19.5

ylide

(Wittig)

Wittig-Horner

19.6

Perkin

Knoevenagel

19.7

-

Darzens

19.8

CN

20.1

20.2

Cr()

Ag()

Pd()

20.3

21.1						
21.2		1,2-	Wagner-Meerwein	pinacol	Prins-pinacol	
	Demjav	Tiffeneau-Demjav				
		Favorskii		Wolff		
	Arndt-Eistert					
21.3		1,2-		1,2-		
21.4			Baker-Venkataraman	Payne	Smiles	
	Stevens	Sommelet-Hauser	Pummerer	Meyer-Schuster	Rupe	
	Fries					
21.5						
21.6		[1,j]-	[1,j]-	[3,3]-	[2,3]-	
		[1,2]-				
22.1						
22.2			[2+2]	[2+4]Diels-Alder	1	3-
22.3		-	Claisen	Cope		
	l, j		l, j			
23.1						
23.2						
23.3			Kumada	Heck	Sonogashira	
	Negishi	Stille	Suzuki			
23.4			Buchwald-Hartwig			
24.1						
24.2						
24.3		(		)		
24.4						
24.5				V		

25.1

2

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