

-

• •
• •

(« - ») .

2011



,

—

,

.

,

.

—

.

«

»

«

».

«

»

.

.

,

:

—

—

—

—

.

.

,

.

,

,

,

,

.

,

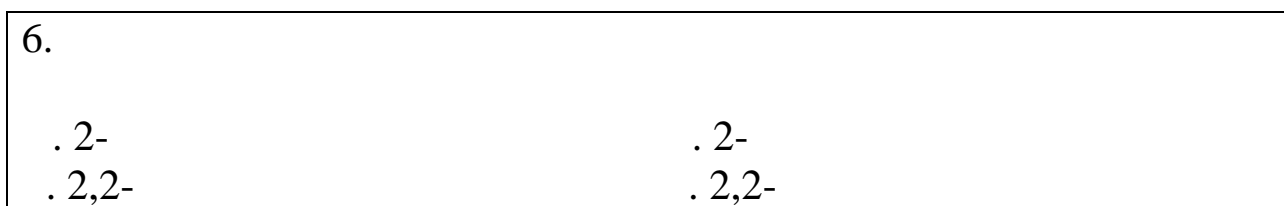
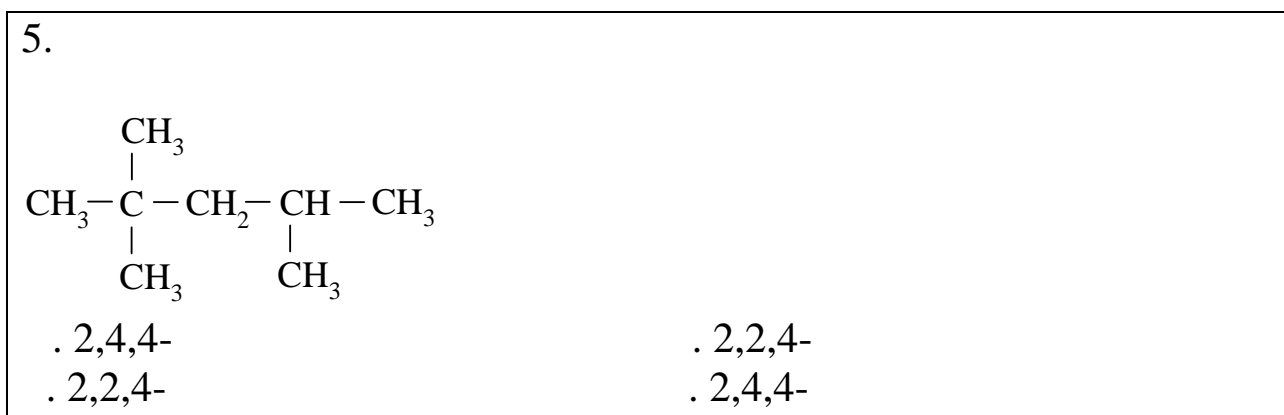
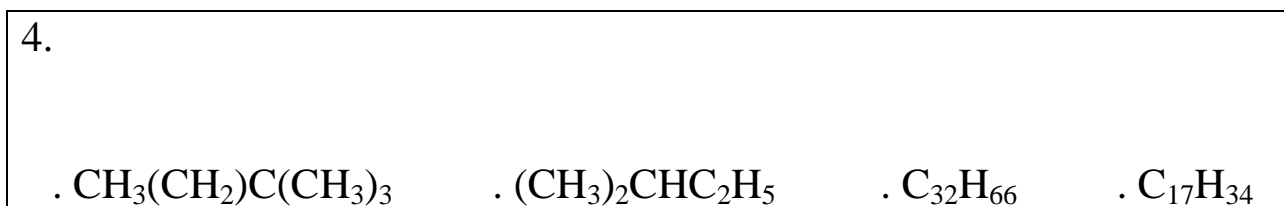
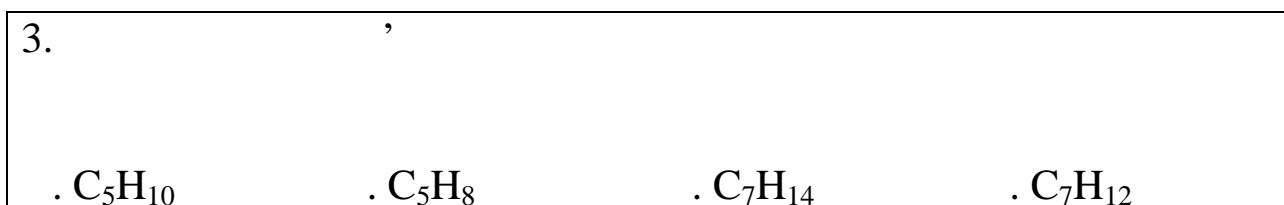
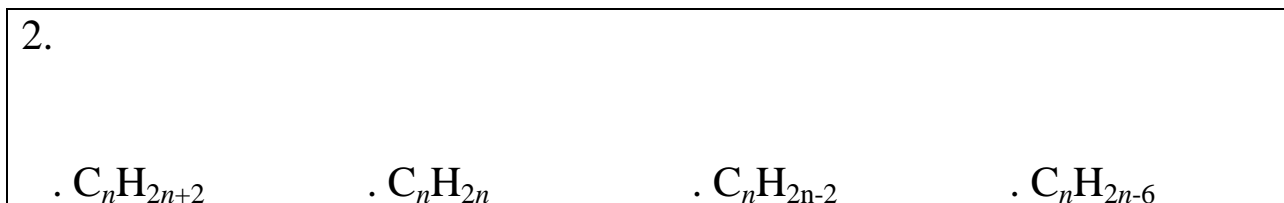
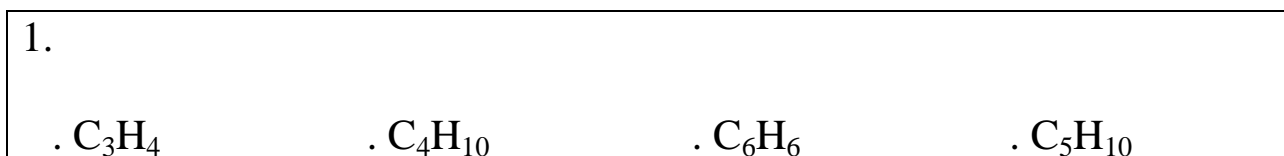
,

,

.



1. .



12.



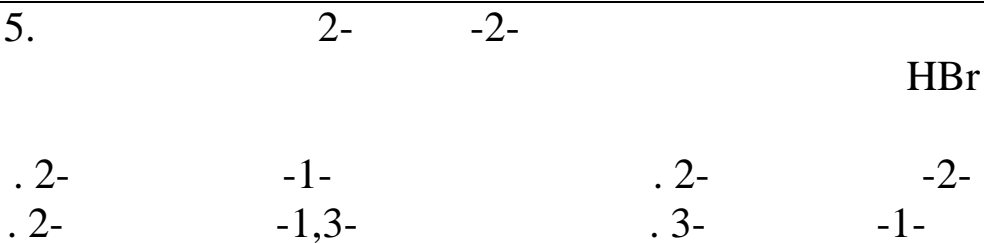
13.



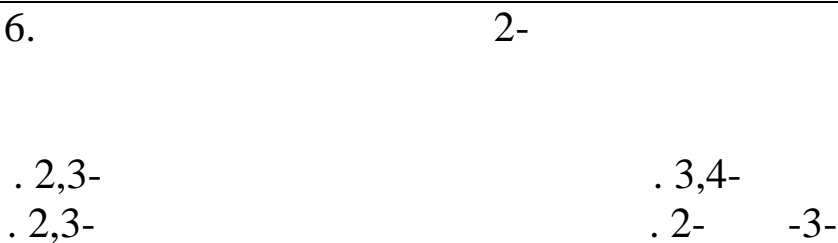
14.

1. :
2. , . 1, 2, 4
3. . . . 1, 3
4. 0,684 / 3 . 1, 2, 3
. 1, 3, 4

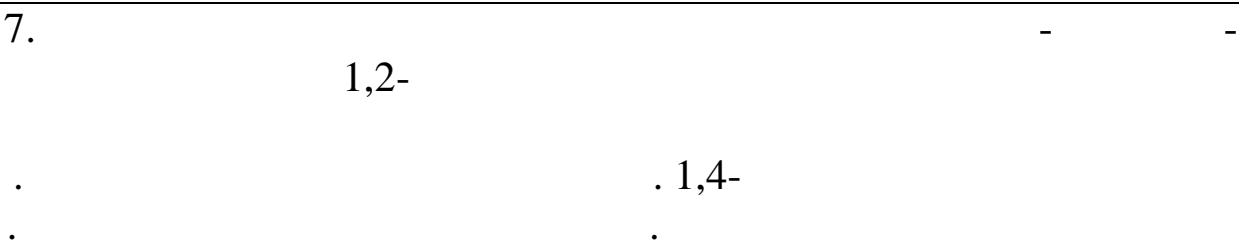
15.



16.



17.



18. , -
 .
 . 2-

19.
 .
 .

20.
 .
 .

21.
 1. :
 2. . 1, 2
 3. . 1, 3
 4. . 1, 4
 . 1, 3, 4

22. ()
 1. $\xrightarrow{\text{Cl}_2 h\nu} \dots \xrightarrow{\text{Mg}} \dots \xrightarrow{\text{H}_2\text{O}} \dots$:
 2. $\xrightarrow{\text{Br}_2 h\nu} \dots \xrightarrow{\text{Mg}} \dots \xrightarrow{-\text{MgBr}_2} \dots$. 1
 3. $\xrightarrow{[\text{O}]} \dots \xrightarrow{\text{NaOH}} \dots \xrightarrow{\text{NaOH}} \dots$. 3
 4. $\xrightarrow{\text{Br}_2 h\nu} \dots \xrightarrow{\text{Na}} \dots$. 1, 2
 . 3, 4

23.

1. _____ :

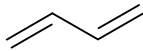
2. _____ . 1, 2

(_____) . 2, 3

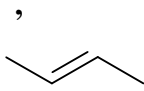
3. _____ . 3, 4

4. _____ . 2, 4

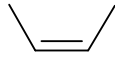
24.



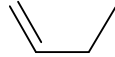
1



2



3



4

:

. 1

. 2, 3

. 2, 3, 4

. 1, 2, 3, 4

25.

, _____ (_____)

$$\text{CH}_3-\text{CH}_2-\text{CH}_2-\overset{\bullet}{\text{C}}\text{H}_2$$

1. _____ :

2. _____ -1- . 1

3. _____ . 1, 2

4. _____ -1- . 1, 3

. 3, 4

26.

, _____ (_____)

$$\text{CH}_3-\overset{\bullet}{\text{C}}\text{H}-\text{CH}_3$$

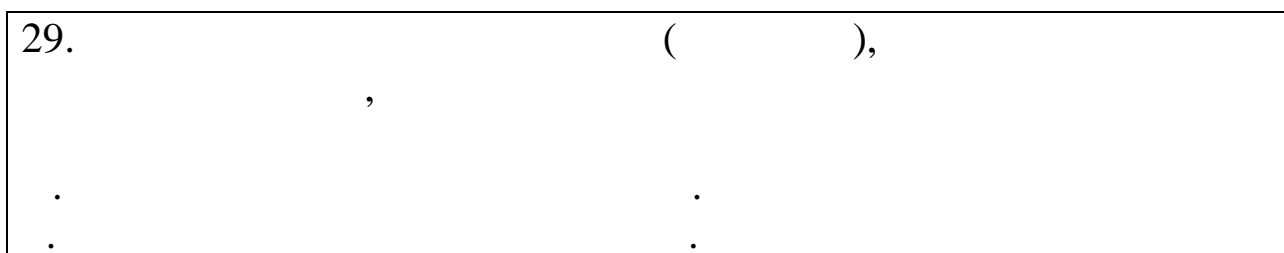
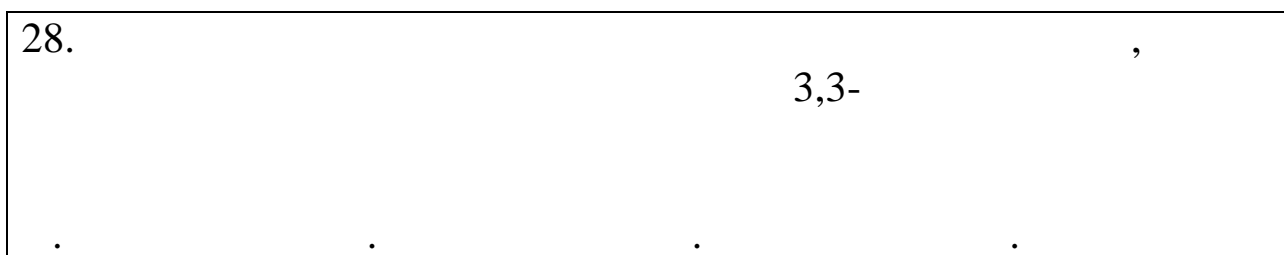
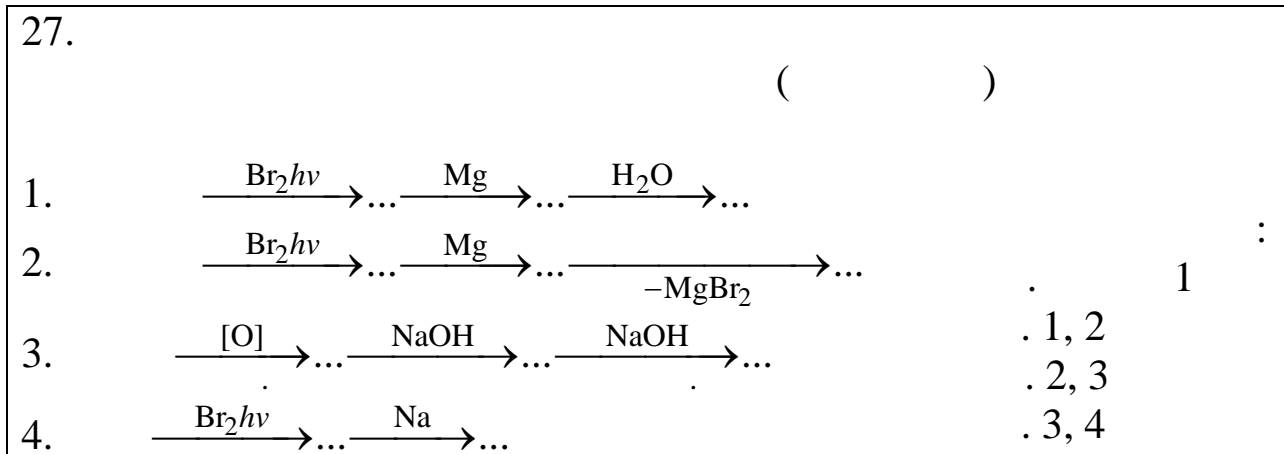
1. _____ :

2. _____ . 1

3. _____ . 1, 2

4. _____ 2- . 1, 2, 4

. 1, 4



2.

1.



2.

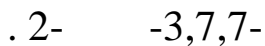
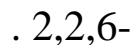
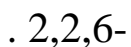
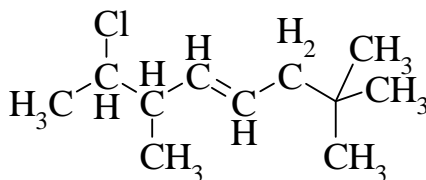
.

.

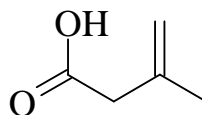
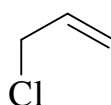
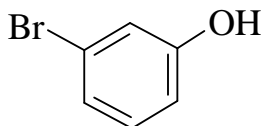
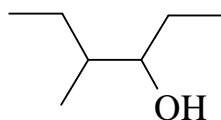
.

.

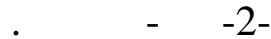
3.



4.



5.



12.

8 16,

-, -

. 2,3-

-1-

. 3- -2-

-2-

. 3- -4-

-2-

. 1,2-

-1-

13.

2-

.

.

.

.

14.

2-

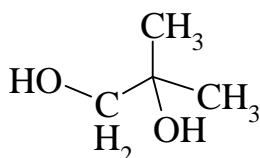
.

.

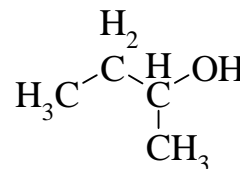
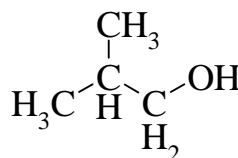
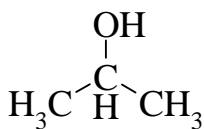
.

.

15. 2-



A



16.

.

,

.

,

-1-

.

,

-1-

.

,

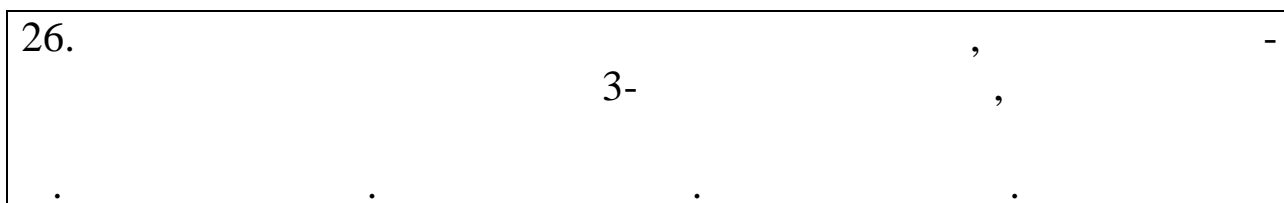
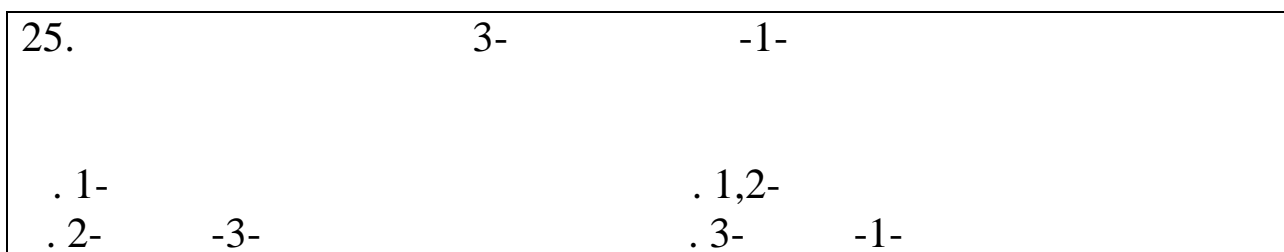
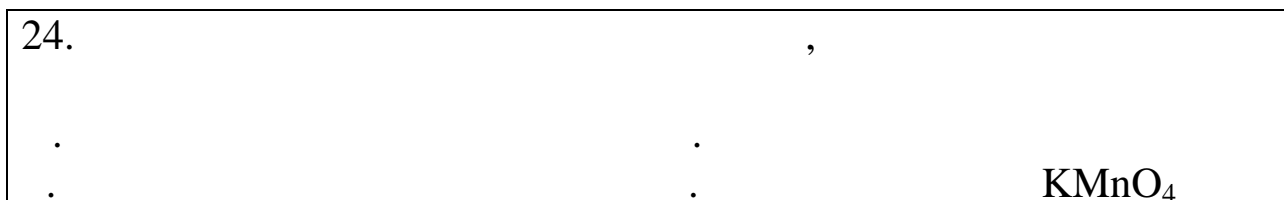
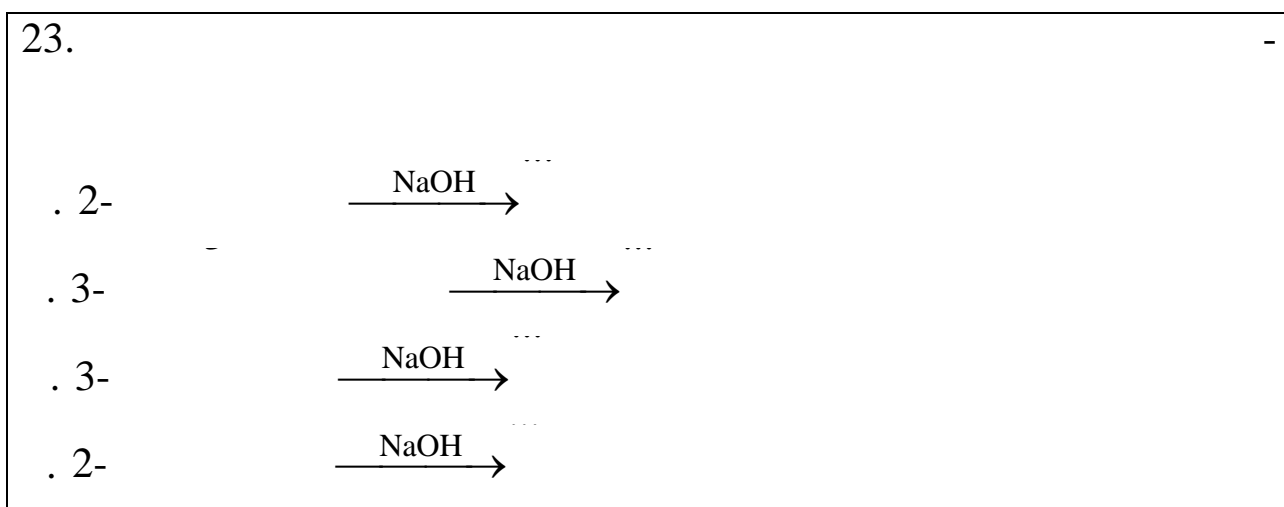
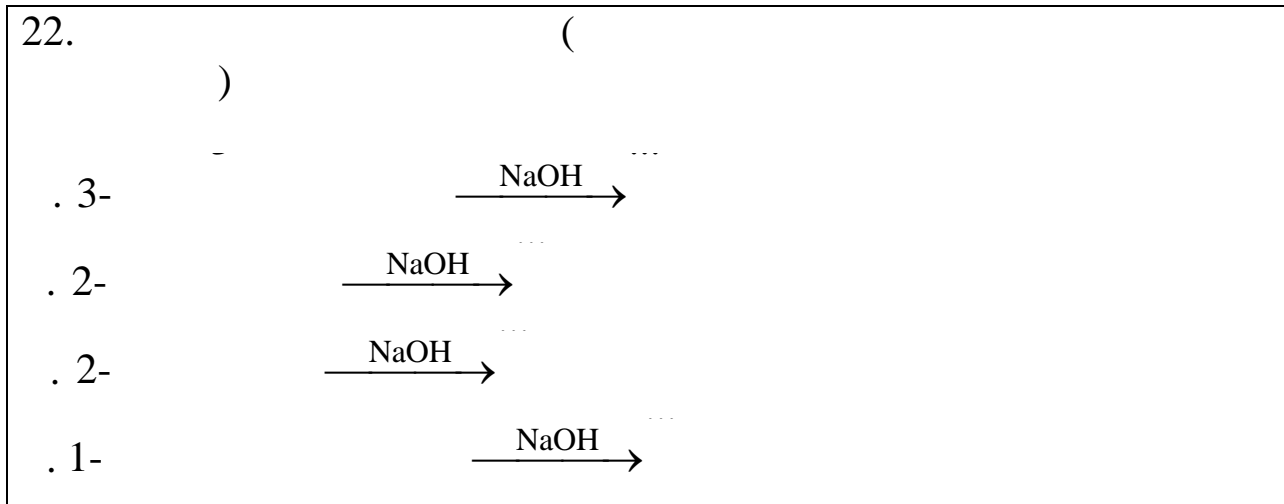
17.
.
.

18. 4- -1-
. 4- . 4- -2-
. -2- . 4- -1-

19. 3- -1-
. 2- -3- . 2-
. 1- -3- . 1,2- -3-

20. ()
. 3- $\xrightarrow{\text{NaOH}}$
. 3- $\xrightarrow{\text{NaOH}}$
. 2- $\xrightarrow{\text{NaOH}}$
. 2,2- $\xrightarrow{\text{NaOH}}$

21.
. -1- .
. -1- .



27.
()
. . . .

28.
. -1- . 2- -2-
. 3- -3- . -3-

29.
1. :
2. . 1, 3
3. . 2, 3
4. . 2, 4
. 3, 4

30.
1. :
2. . 1, 2
3. . 2, 3
4. . 2, 4
. 2, 3, 4

31. -2-
. .
. KMnO₄ .

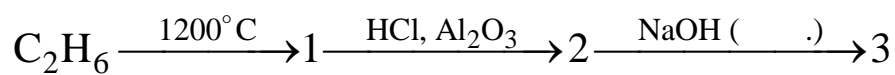
32.

- ,
- ,
- ,
- ,

33.

- 3^-Cl
- $2\text{Cl}-2\text{Cl}$
- 3^-Cl_2
- 3^-Cl_3

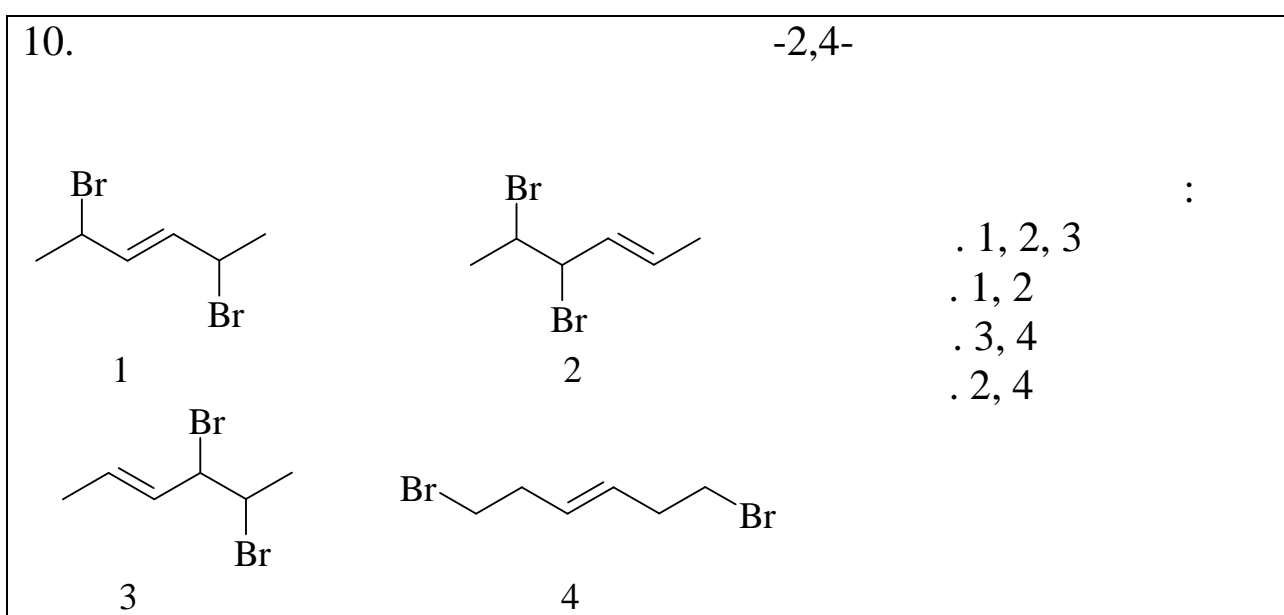
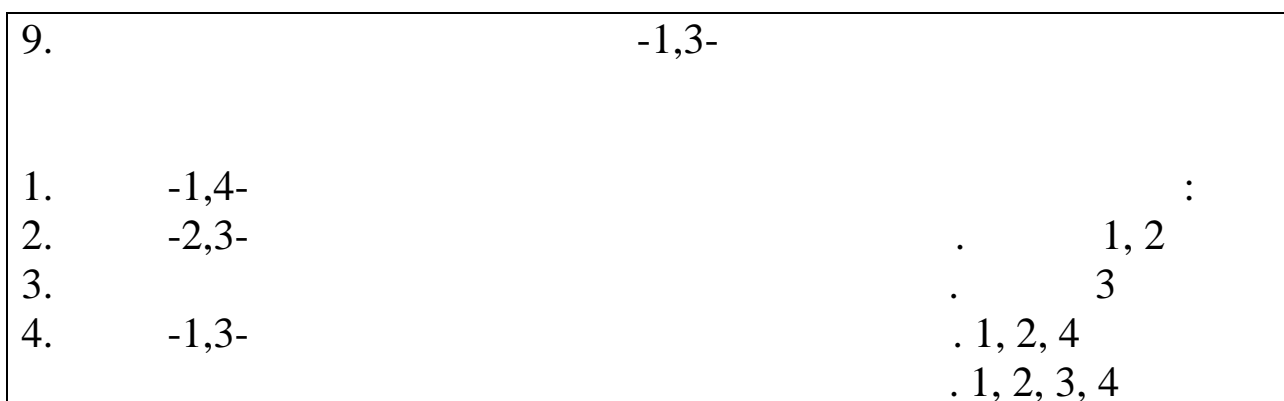
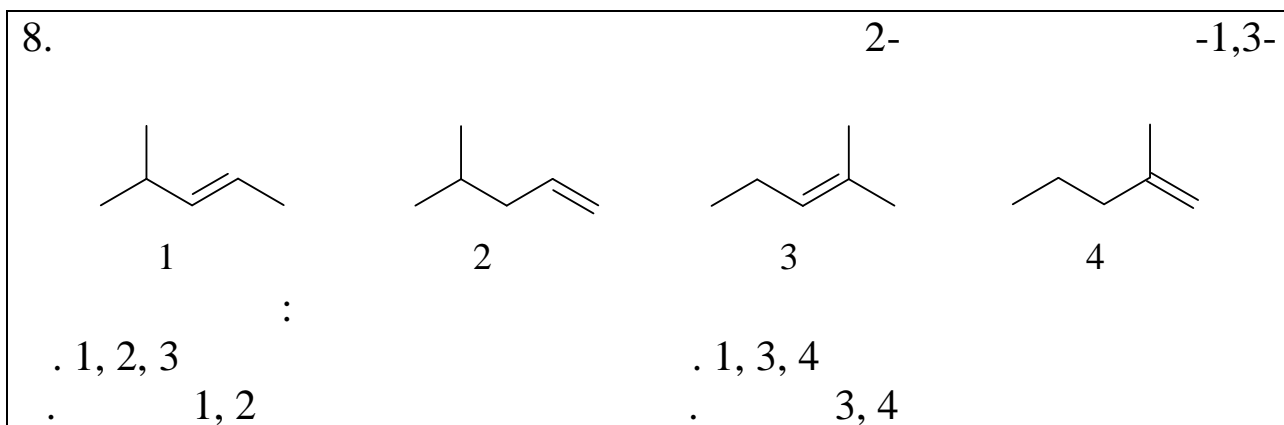
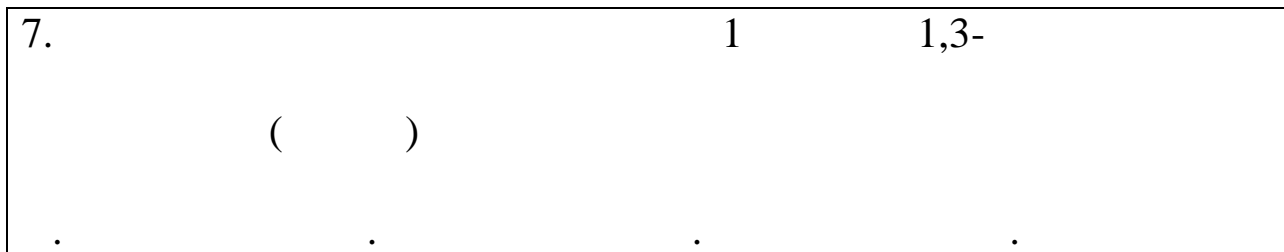
34.



- 2 4
- 2 6
- 2 2
- $\text{C}_3 6$

35.

- -1,4-
- -3-
- -1,4-



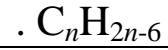
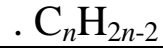
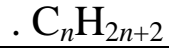
11.		-1,3-	
1.	-1-		:
2.	-2-		. 1, 2
3.			. 1, 2, 3
4.	-3-		. 2, 4
			. 3, 4

12.			
1.	3,4-	-3-	-1-
2.	1,4-	-2-	-2
3.	3,4-	-2-	-1-
4.	1,2-	-3-	
			. 1, 2, 3
			. 2, 4
			. 3, 4

13.		-1,3-	Br ₂ /CCl ₄
1.	2,4-		:
2.	4,5-	-2-	. 2, 3
3.	1,4-	-2-	. 1, 2, 3, 4
4.	3,4-	-1-	. 2, 3, 4
5.	2,4-	-2-	. 1, 2, 3, 4, 5

4.

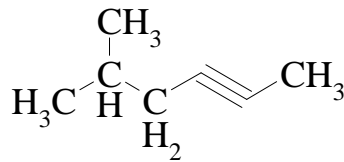
1.



2.

-2-

3.



. 4-

-2-

. 2-

-4-

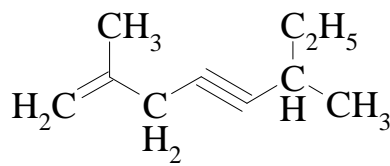
. 1-

-2-

. 5-

-2-

4.



. 2-

-6-

-6-

-3-

. 2-

-6-

-6-

-3-

. 6-

-2-

-1-

-4-

. 2-

-6-

-3-

-6-

5.

5 8

11.

.
. .

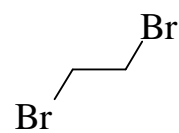
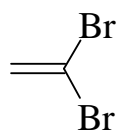
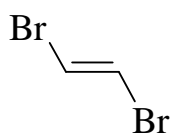
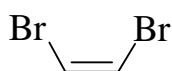
KMnO₄

12.

.
. .

.
. .

13.



14.

.
. .

-3-

.
. .

-2-

15.

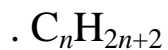
.
. .

.
. .

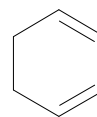
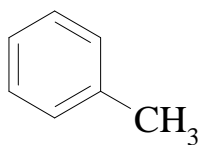
?

5.

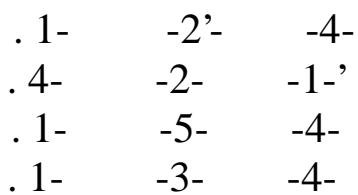
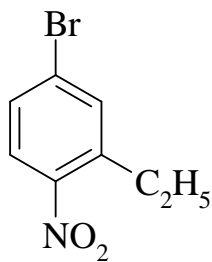
1.



2.



3.



4.

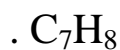
—

.
.

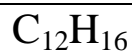
.
.

5.

—



6.



.
.

.
.

7. ,

1. :

2. . 1, 2, 3

3. . 2, 3

4. . 2, 3, 4

. 1, 2, 3, 4

8.

1.

2.

3.

4.

:

. 1, 2 . 1, 2, 4

. 1, 3 . 1, 3, 4

9. - ,

. () (

. ()

. ()

10.

.

.

.

.

17.

.
.

.
.

18.

. Cl₂, .
. H₂/Ni, t = 180 °C

. H₂/Pt, t = 20 °C
. Br₂, FeBr₃

19.

.
.

.
.

20.

8 10

-

.
. 1,2-

. 1,3-
. 1,4-

21.

1. Cl₂, .
2. H₂/Ni, t = 180 °C
3. 2 4, H₂SO₄
4. 2 , t = 300 °C

. :
. 1, 2
. 1, 4
. 1, 2, 3
. 1, 3, 4

22.

- 1.
- 2.
- 3.
- 4.

. :
. 1, 2
. 2, 3
. 1, 2, 4
. 1, 3, 4



23.

- | | |
|--|--------------|
| 1. Cl ₂ , . | : |
| 2. H ₂ /Ni, t = 180 °C | . 1, 2 |
| 3. HNO ₃ , H ₂ SO ₄ , t = 40 °C | . 2, 3 |
| 4. Br ₂ , FeBr ₃ | . 2, 4 |
| | . 1, 2, 3, 4 |

24. 1,4-

- | | |
|---------|-----------|
| 1. | : |
| 2. | . 1, 2 |
| 3. 1,4- | . 1, 3 |
| 4. 4- | . 3, 4 |
| | . 1, 3, 4 |

25.

- | | |
|-----------|-----------|
| 1. | : |
| 2. | . 1, 2 |
| 3. 1- -1- | . 2, 3 |
| 4. | . 3, 4 |
| | . 2, 3, 4 |

26.

- | | |
|-------|--------------|
| 1. | : |
| 2. | . 1, 2 |
| 3. 1- | . 1, 2, 3 |
| 4. | . 1, 2, 4 |
| | . 1, 2, 3, 4 |

6. .

1.

. C_nH_{2n-7} . C_nH_{2n+1} . C_nH_{2n-1} . C_nH_{2n-3}

2. 4-

. $C_nH_{2n+2}O$. $C_nH_{2n-2}O$. $C_nH_{2n-6}O$. $C_nH_{2n-8}O$

3.

. 6 5 . 4 9 . 5 9 . 2 4()₂

4.

. -2- . -1-

. 2- -2- . 2- -1-

5.

$$\begin{array}{c} \text{CH}_3 \\ | \\ \text{H}_3\text{C}-\text{C}-\text{OH} \\ | \\ \text{H} \end{array}$$

. 1- -1- . -2-

. 2- -1- . -1-

6. ,

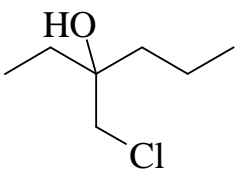
. 3- -2- . -2-

. 4- -3- . -3-

7.

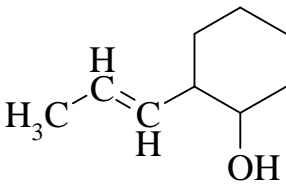
. 8 . 13 . 16 . 22

8.



. 3- -3- . 2- -1- -2-
 . 1- -2- -2- . 3- -3-

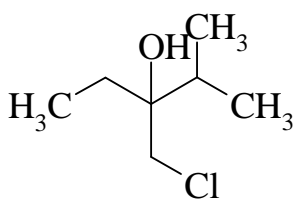
9.



. 4- -2- . 3- -4- -2-
 . 3- -2- . 4- -2- -5-

10.

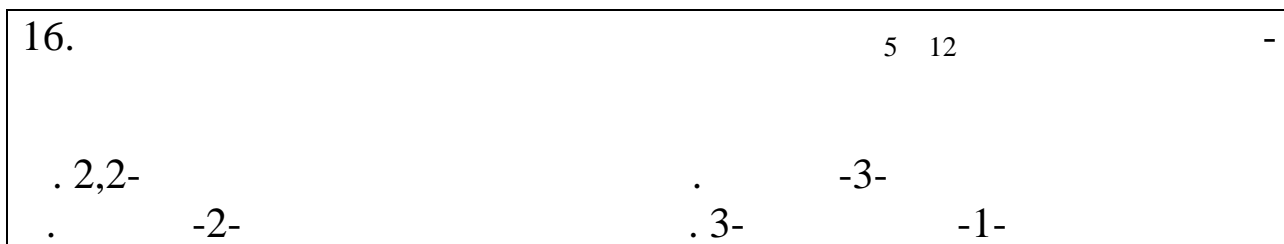
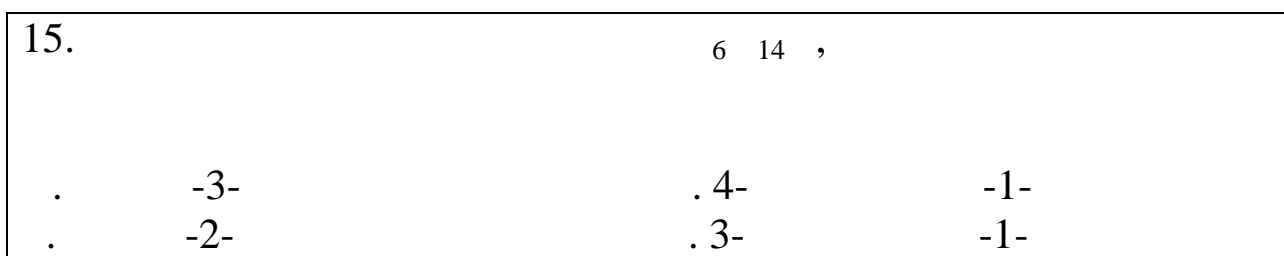
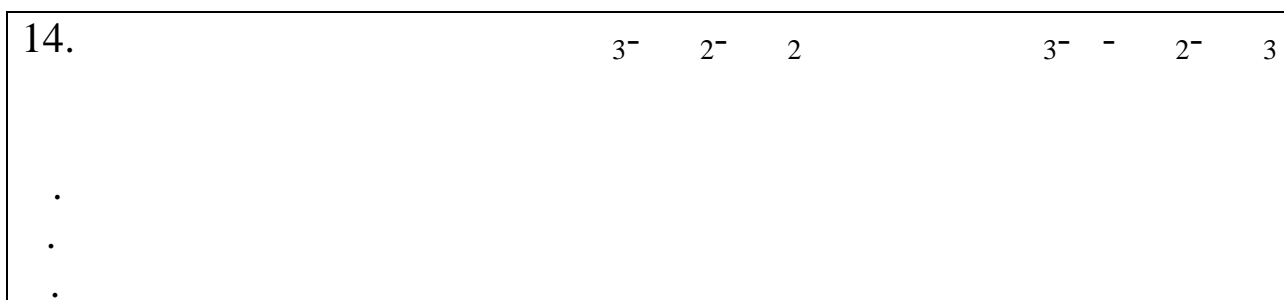
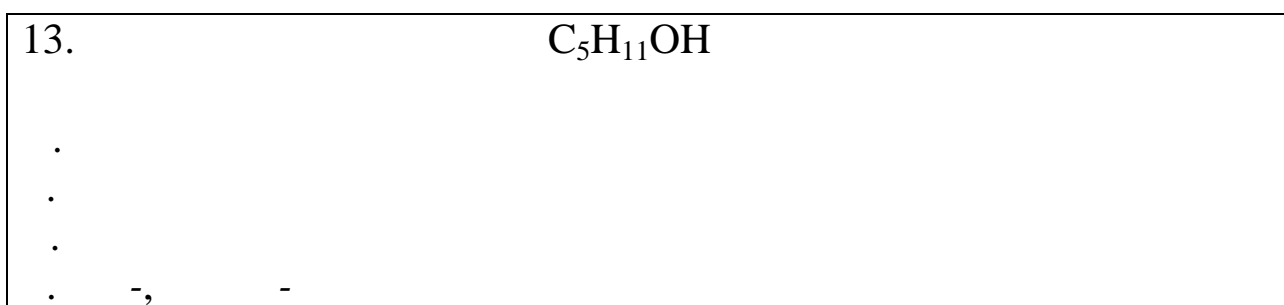
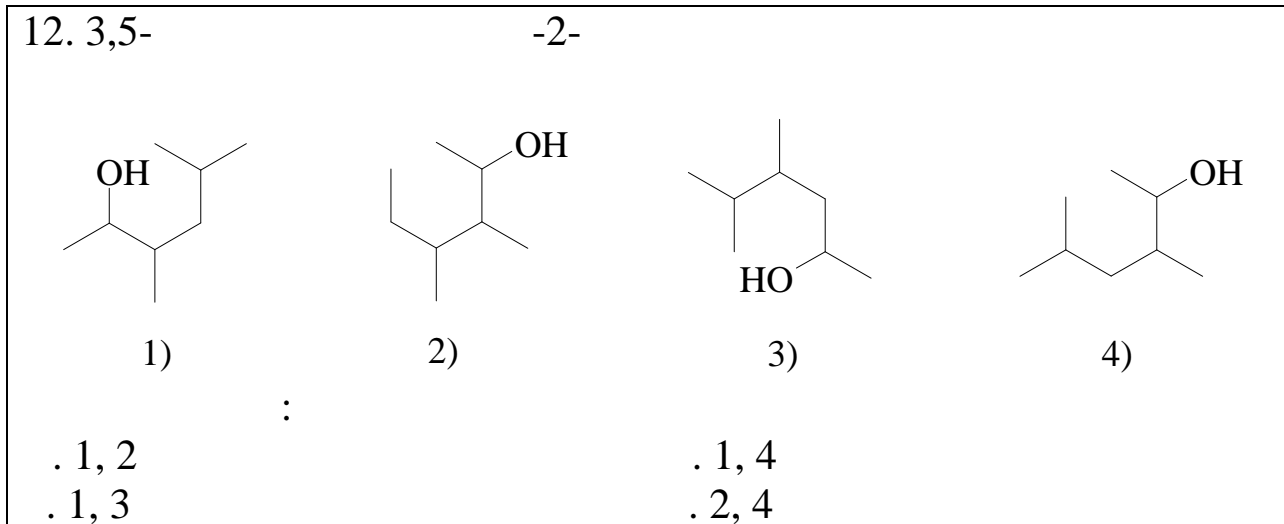
. 2- -3- -



. .
 . .

11.

. 1,2- .
 . -1,4- . -1,2,3,4-



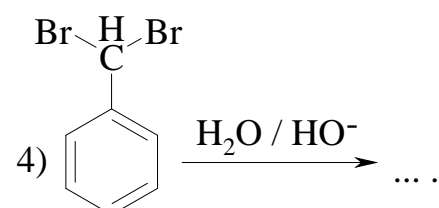
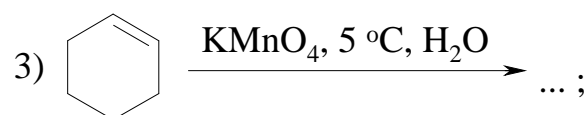
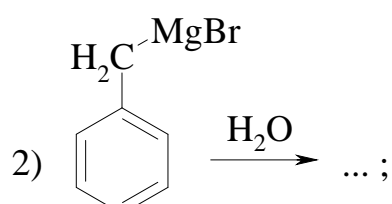
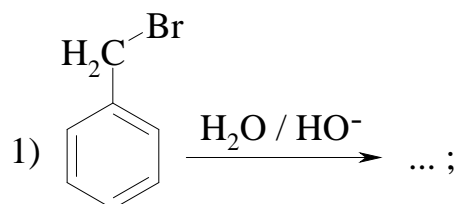
17.

- . $\text{CH}_2 = \text{CH}_2 \quad \text{H}_2\text{O}/\text{H}^+$
- . $\text{CH}_3 - \text{CHO} \quad \text{H}_2/\text{t}^\circ, \quad .$
- . $\text{CH}_3 - \text{CH}_2\text{Cl} \quad \text{KOH}(\quad . \quad . \quad .)$
- . $\text{C}_6\text{H}_5\text{Cl} \quad \text{KOH}(\quad . \quad . \quad .)$

18.

- . ()
- .

19.



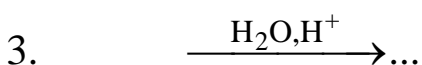
- . 1, 2
- . 1, 3

- . 1, 4
- . 1, 2, 3

20.

-2-

()



- . 1, 2
- . 2, 3
- . 3, 4
- . 2, 3, 4

21.

.

.

22.

1.

2.

3. . 1, 3

4. . 2, 4

5. . 2, 5

6. . 5, 6

23.

1. $\xrightarrow{\text{LiAlH}_4} \dots$

2. $\xrightarrow{\text{KMnO}_4, \text{H}_2\text{O}} \dots$. 1, 2

3. 2,2- $\xrightarrow{\text{KOH}} \dots$. 1, 3

4. 1,2- $\xrightarrow{\text{KOH}} \dots$. 1, 2, 3
 . 1, 2, 4

24.

1. 78 °C

2. -

3.

4. 0,78 / 3

.

. 1, 2 . 1, 2, 4

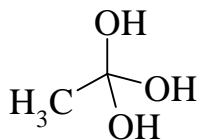
. 1, 2, 3 . 1, 2, 3, 4

25.

. -1-
. -2-

.
. 2- -1-

26.



.
.

.
.

27.

.
.

.
.

(0°)

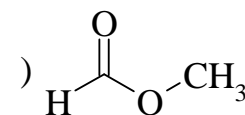
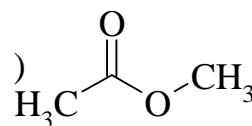
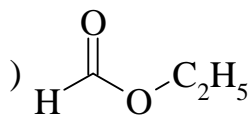
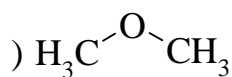
28.

4 9 ,

,

,

29.



30.

-2-

.
.

.
.

31.

.

.

32. -2-

. uO . H₂O . H₂ . FeBr₃

33. -2- -

140 °

.

.

34.

1. :

2. . 1, 2

3. . 1, 3

4. . 2, 3

. 3, 4

35. ,

. $2C_6H_5OH + 2Na \rightarrow 2C_6H_5ONa + H_2$

. $C_6H_5OH + NaOH \rightarrow C_6H_5ONa + H_2O$

. $C_6H_5ONa + H_2O + CO_2 \rightarrow C_6H_5OH + NaHCO_3$

. $C_6H_5OH + 3Br_2 \rightarrow C_6H_2Br_3OH + 3HBr$

36. ()

. -1- . 3- -3-
 . -2- . 4- -2-

37. , ,

5 10 .

. -2- . 2- -2-
 . 3- -2- . 2,2- -1-

38. ,

4 8.

. -1- . 2- -2-
 . -2- . 2- -1-

39.

. :
 . -1,4-

40.

. -1- .
 . -2- .

41.
.
.
.
.
(I)

42.
.
.
(II) .
.
CCl₄

43.
.
.
,
Cu(OH)₂
LiAlH₄.
.
.
-1,2-

44.
.
.
,
Cu(OH)₂
.
-
.
-2-
-1,2- .
-1-

45.
.
.
(III) (II)
.
(III) (III)

52. (II) -

.

.

53.

1. :

2. . 1, 2

3. . 2, 3

4. . 1, 3

. 1, 2, 4

54. (), -2-

() ,

1. H_2SO_4 :

2. Br_2, H_2O . 1, 2

3. Na . 2, 3

4. $Cu(OH)_2$. 1, 3

. 4

55.

1. :

2. . 1, 2

3. . 2, 3

4. 2- . 2, 4

. 1, 2, 4

56.

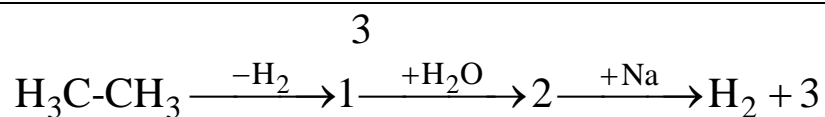
.

.

57.

- | | | |
|----|---|---------|
| 1. | | : |
| 2. | . | 1, 2 |
| 3. | . | 1, 2, 4 |
| 4. | . | 1, 3, 4 |
| | . | |

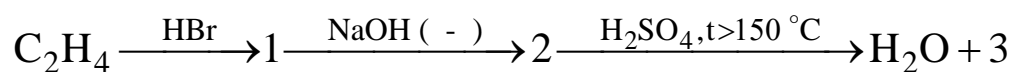
58.



- . 2 5
- . 2 5 Na

- . C_3ONa
- . C ONa

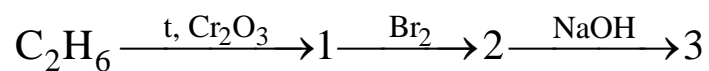
59.



- . 2 4
- . 2 6

- . C_3OH
- . C_4

60.



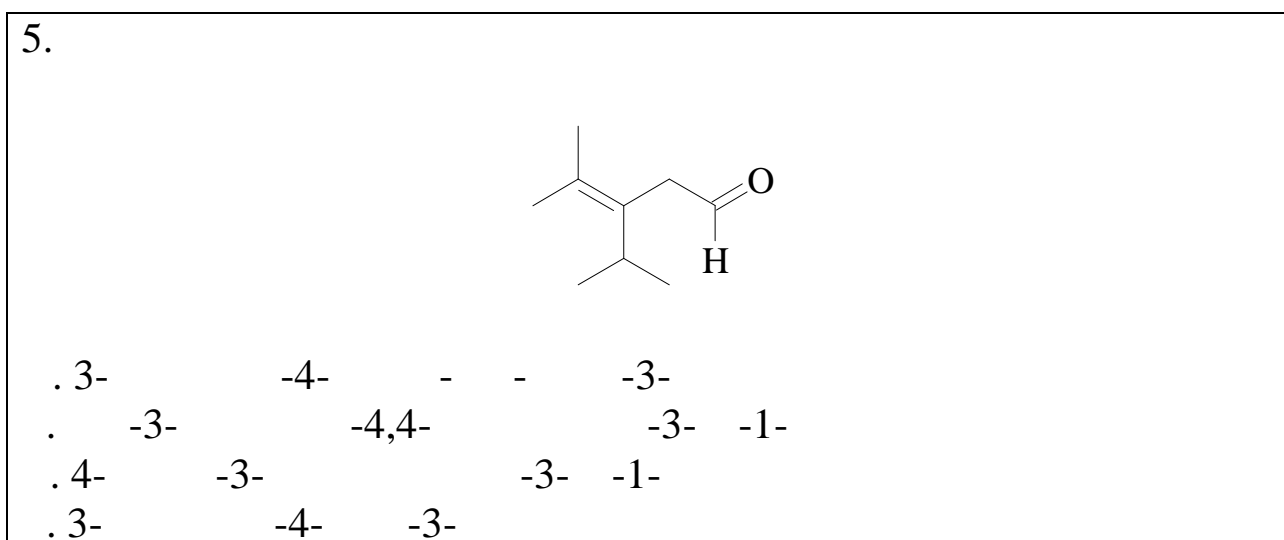
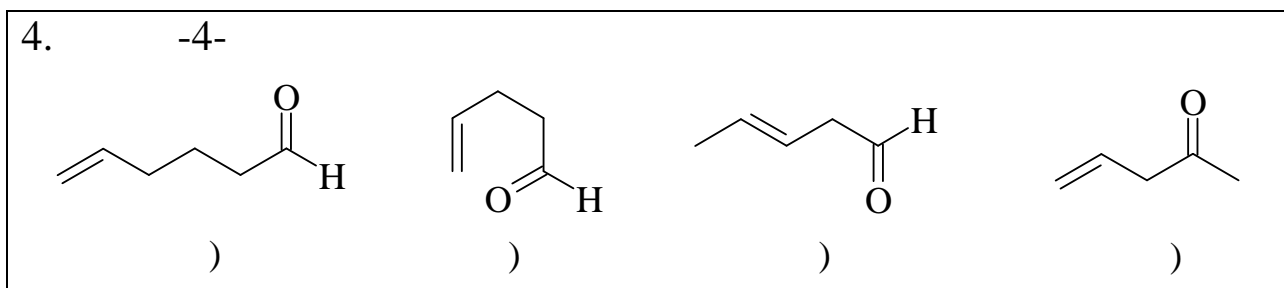
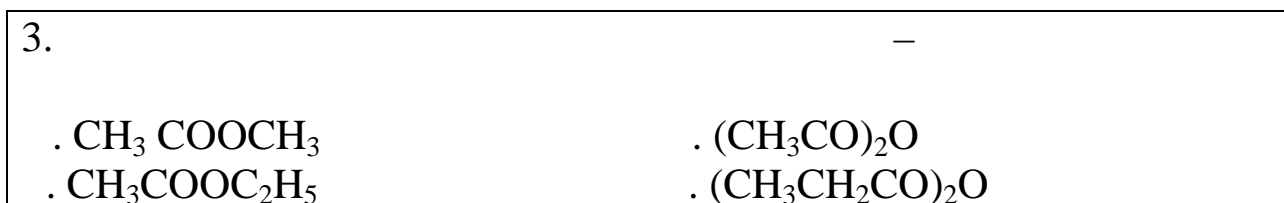
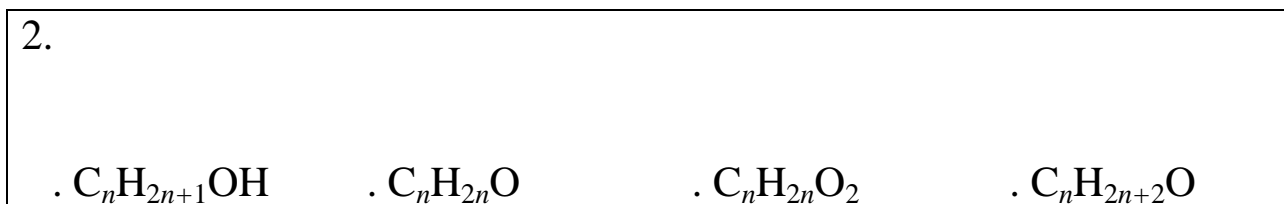
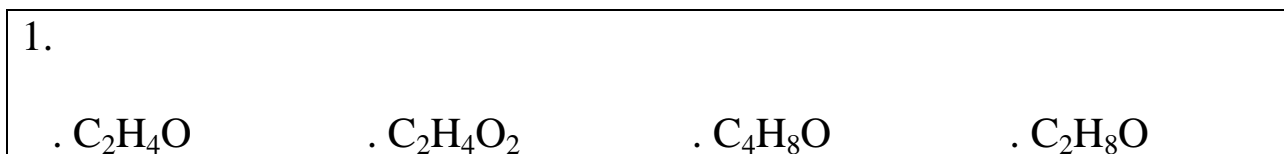
- . 2 C_5OH
- . 2 $\text{C}_4(\text{OH})_2$

- . C_3OH
- . C_3COH

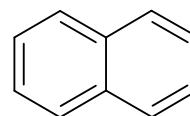
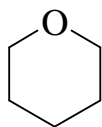
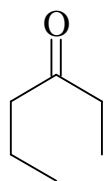
61.

- .
- .
- .
- .

7. .



10.



.

.

11.

.2-

-2-

12.

-

2-

13.

14.

5 10

.2-

.3-
.2,2-

15.

,

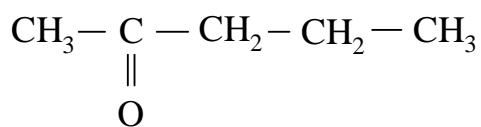
()

.

.2-
.2-

-1-

16.



-2-

.

. -1-

. -2-

. -1,3-

17.

- | | | |
|----|--|--------------|
| 1. | $\xrightarrow{\text{H}_2\text{O, HgSO}_4} \dots$ | : |
| 2. | $\xrightarrow{\text{H}_2\text{SO}_4, t \text{ } ^\circ\text{C}} \dots$ | . 1, 2 |
| 3. | $\xrightarrow{\text{NaOH, H}_2\text{O}} \dots$ | . 2, 3 |
| 3. | 1,1- | . 1, 3 |
| 4. | $\xrightarrow{\text{K}_2\text{Cr}_2\text{O}_7, \text{H}_2\text{SO}_4} \dots$ | . 1, 2, 3, 4 |

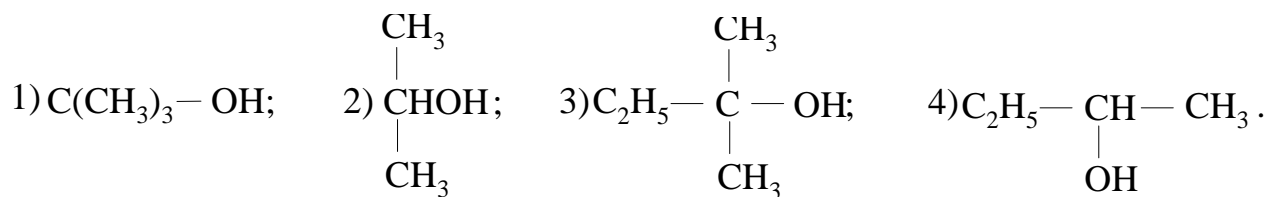
18.

- | | | |
|----|----------------|-----------|
| 1. | | : |
| 2. | | |
| 3. | CuO | . 2, 3, 5 |
| 4. | $2(\text{Ag})$ | . 2, 3, 6 |
| 5. | | . 1, 2, 3 |
| 6. | | . 2, 3, 4 |

19.

- | | | | |
|----|------|---|-----------|
| 1. | -1- | $\xrightarrow{\text{K}_2\text{CrO}_7, \text{H}_2\text{SO}_4} \dots$ | : |
| 2. | -2- | $\xrightarrow{\text{K}_2\text{CrO}_7, \text{H}_2\text{SO}_4} \dots$ | . 1, 2 |
| 3. | | $\xrightarrow{\text{H}_2\text{O, H}^+} \dots$ | . 3 |
| 4. | 1,1- | $\xrightarrow{\text{KOH}} \dots$ | . 1, 3, 4 |
| | | | . 1, 4 |

25.



. 1, 2

. 1, 3

:

. 2, 3

. 3, 4

26.

.

.

.

.

27.

,

,

.

.

(II)

.

.

28.

,

.

.

(I)

.

NaOH

.

29.

.

.

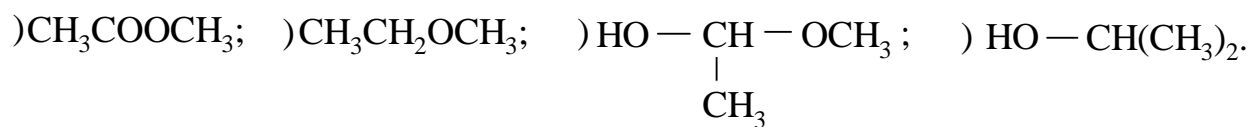
.

.

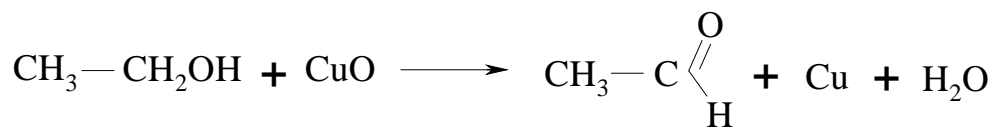
(III)

(II)

30.

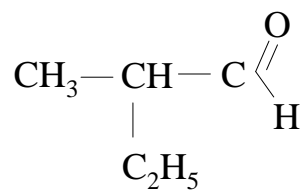


31.



.
. .
. .
. .

32.



. 2- -1-
. 2- -2
. 2- -1-
. 3- -4-

33.

. ,
. ,
. ,
. ,

8.

. 2- .

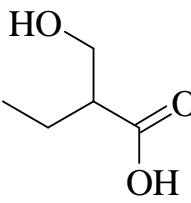
9.

. .

10. $nH_{2n}O_3$

. .

11. -



. 2- . 2- -1-
. 3- -2-
. 2- -3-

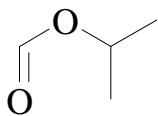
12.

. . 2-
. .

13.

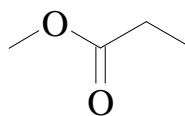
. . -2-
. .

14.



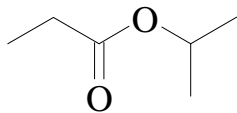
)

;



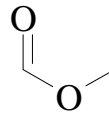
)

;



)

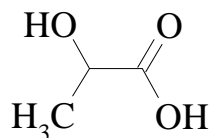
;



)

.

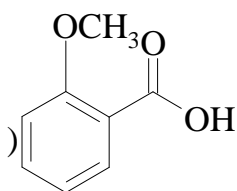
15.



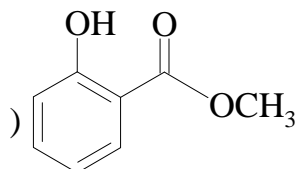
.
. 2-

.

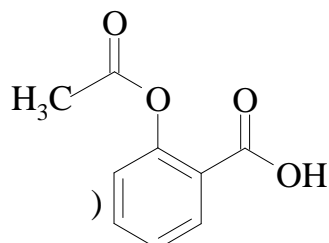
16.



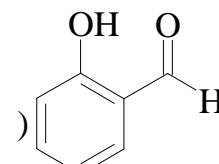
)



)



)



)

17.

,

-

,

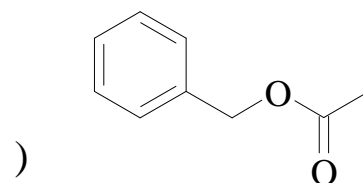
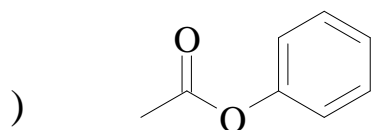
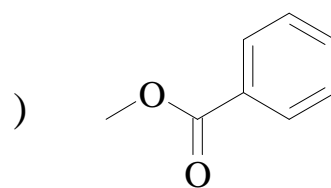
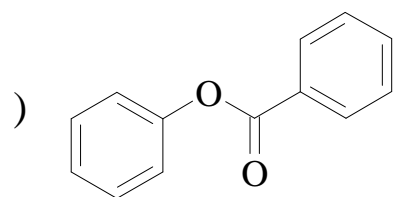
.

.

.

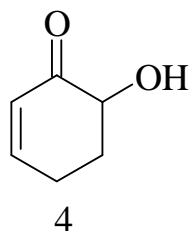
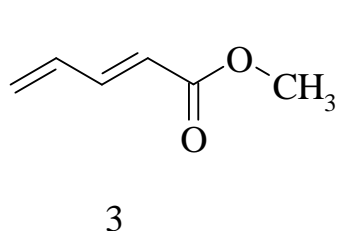
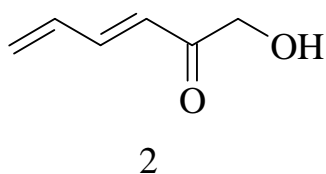
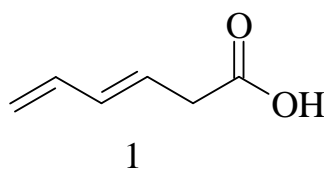
.

18.



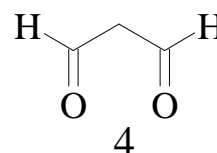
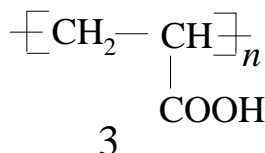
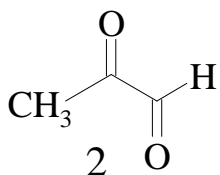
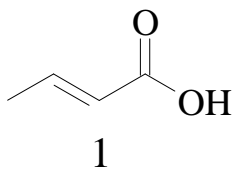
19.

(-2,4-



- :
 . 1, 2
 . 2, 3
 . 3, 4
 . 2, 3, 4

20.



- :
 . 1, 2
 . 2, 3
 . 2, 4
 . 2, 3, 4

21.
5 10 2
.
.

22.
. 2-
.

23.
5 10 2
.

24.
.
-2-
.

25.
.
.

26.
.
.

27.
.
.

28.

.
. .
. .
. .

(.)

29.

.
. .
. .
. .

(II)

30.

1. « . » :

2.

1,1,1-

. 1, 2

3.

. 1, 2, 3

4.

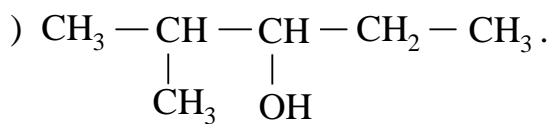
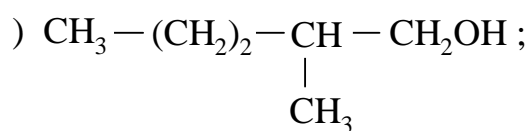
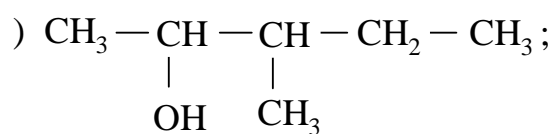
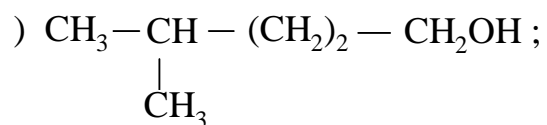
. 1, 3

. 1, 2, 3, 4

31.

2-

-



32.

.
. .

.
. .

33.

1.	-1-	$\xrightarrow{\text{H}_2\text{O, HgSO}_4}$	...	:
2.		$\xrightarrow{6\text{H}_4\text{COOOH}}$	...	. 1, 2
3.	1,1,1-	$\xrightarrow{\text{NaOH, H}_2\text{O}}$	...	. 2, 3
4.		$\xrightarrow{\text{KMnO}_4, \text{H}_2\text{SO}_4}$	...	. 3, 4
				. 2, 3, 4

34.

1.		$\xrightarrow{\text{NaOH, H}_2\text{O}}$	...	:
2.		$\xrightarrow{6\text{H}_5\text{COOOH}}$	...	. 1, 2
3.		$\xrightarrow{\text{KMnO}_4, \text{H}_2\text{SO}_4, t^\circ\text{C}}$	...	. 2, 3
4.		$\xrightarrow{\text{KMnO}_4, \text{H}_2\text{SO}_4, t^\circ\text{C}}$	...	. 1, 4
				. 1, 2, 3, 4

35.

1.		$\xrightarrow{\text{H}_2}$	...	:
2.		$\xrightarrow{\text{KMnO}_4, \text{H}_2\text{O}}$	...	. 1, 2
3.		$\xrightarrow{\text{O}_2}$	...	. 1, 3
4.	-1-	$\xrightarrow{\text{KMnO}_4, \text{H}_2\text{SO}_4}$	...	. 1, 4
				. 1, 3, 4

36.

1.				
2.				
3.				:
4.				. 1, 2, 3, 4, 5
				. 1, 3, 5, 6
5.				. 1, 3, 4, 5
6.				. 1, 4, 5

37.

.
. .
. .
. .

38.

1.

:

2.

. 1, 2

3.

-1-

. 1, 3

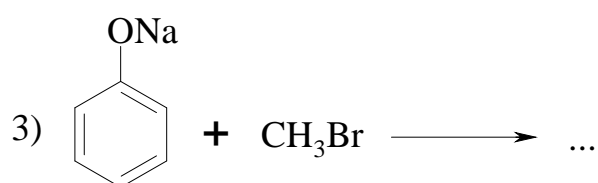
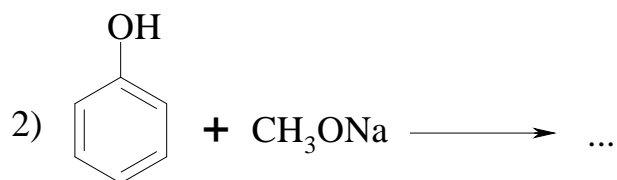
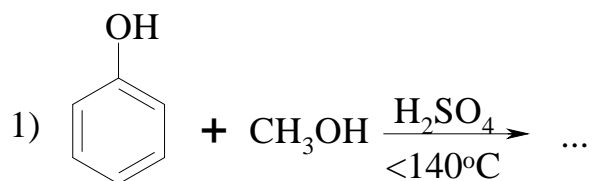
4.

. 1, 2, 3

. 1, 3, 4

39.

()

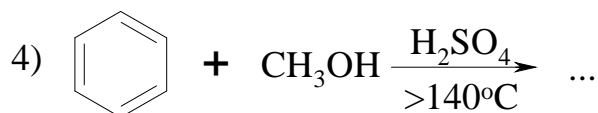


. 1, 2

. 3

. 2, 3

. 1, 4

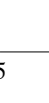


40. . . (100°)
 . . (170°)

41. . .
 . .

42. 1. -1- + :
 2. + 1, 2
 3. + . 1, 2, 3
 4. + . 1, 3
 . 1, 3, 4

43. $\text{CH}_3\text{COOH} \rightarrow \text{CH}_3\text{COONa}$
 ,
 . Na_2SO_4 NaHCO_3 . Na_2SiO_3 NaNO_3
 . Na_2S Na_2CO_3 . HCOONa NaHS

44. ,
 1) $\text{C}_{16}\text{H}_{33}\text{OSO}_2\text{ONa}$; 3) $\text{C}_{12}\text{H}_{25}$  SO_3K ;
 2) $\text{C}_{17}\text{H}_{35}$ OOK ; 4) $\text{C}_{15}\text{H}_{31}$ OOH .
 :
 . 1, 2 . 1, 2, 3
 . 1, 3 . 1, 2, 3, 4

45.

.
. .
. .

(I)

46.

.
. .

(I)

.
. .

47.

,
,

. H₂CO₃ HCOOH
. HCOOH CH₂(Cl)COOH

. C₃H₇-COOH H₂CO₃
. H₄SiO₃ H₂CO₃

48.

.
. .

. 4-

. .

49.

.
. .

.
. .

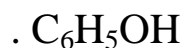
50.

.
. .

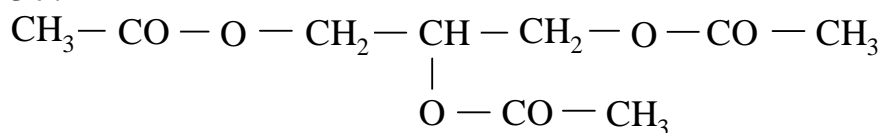
.
. .



56.



57.

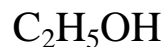
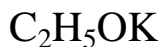


.
.
.
.

58.

,

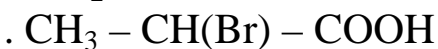
KOH,



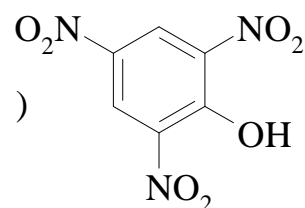
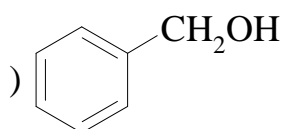
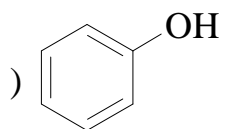
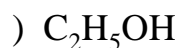
59.

(

)



60.



61. , -1- . ,
 , -
 . : (II)
 . :

62.
1. :
2. . 1, 2
3. (-2-) . 2, 3
4. . 3, 4
. 1, 3, 4

63.
 ,
 . :
 . :

64.
 . :
 . :

65.
 . :
 . :

66. HCOONa
 . :
 . :

67.

. .
. .

68.

. , , ,
. , , ,
. , , ,
. , , ,

69.

. .
. .

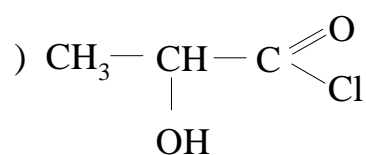
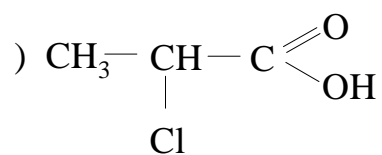
70.

. .
. .

71.

. .
. .

72.



73. ,

1. Na HCO₃ :

2. Br₂/H₂O . 1, 2

3. Ag₂O/NH₃ . 2, 3

4. FeCl₃ . 1, 4

. 3, 4

74.

. 2- . 2-

.

75.

$\text{Cl}^- \text{H}_3\text{N}^+ \text{CH}_2 \text{COOH}$

1) NaOH
 2) HCl
 3) SOCl₂
 4) C₂H₅OH

:

. 1, 2

. 2, 3

. 1, 3, 4

. 1, 4

76.

() 2= -

)

. $\xrightarrow{\text{H}_2, \text{Pt}} \dots \xrightarrow{\text{H}_2\text{O}, \text{H}^+} \dots$

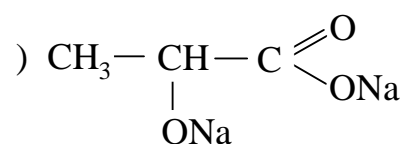
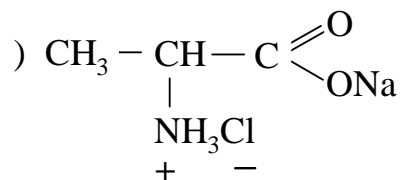
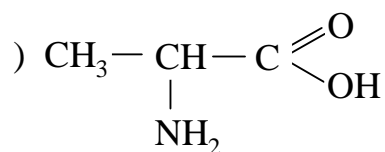
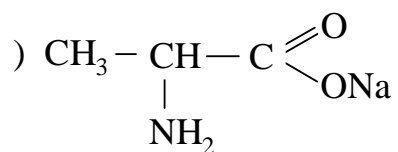
. $\xrightarrow{\text{H}_2\text{O}, \text{H}^+} \dots \xrightarrow{\text{H}_2, \text{Pt}} \dots$

. $\xrightarrow{\text{Na}} \dots \xrightarrow{\text{CH}_3\text{COCl}/\text{H}^+} \dots$

. $\xrightarrow{\text{NaOH}} \dots \xrightarrow{\quad} \dots$

77.

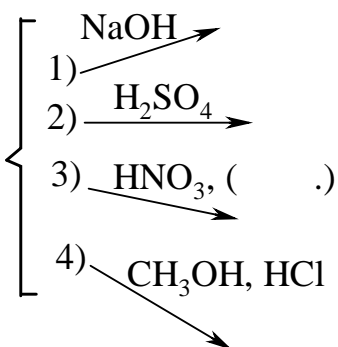
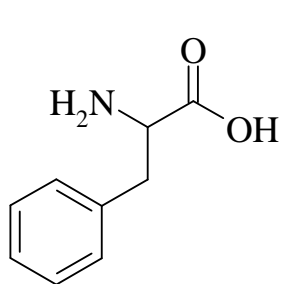
α -



78. 2-

-3-

()



- . 1, 2
. 1, 2, 3
. 1, 3, 4
. 1, 2, 3, 4

79.

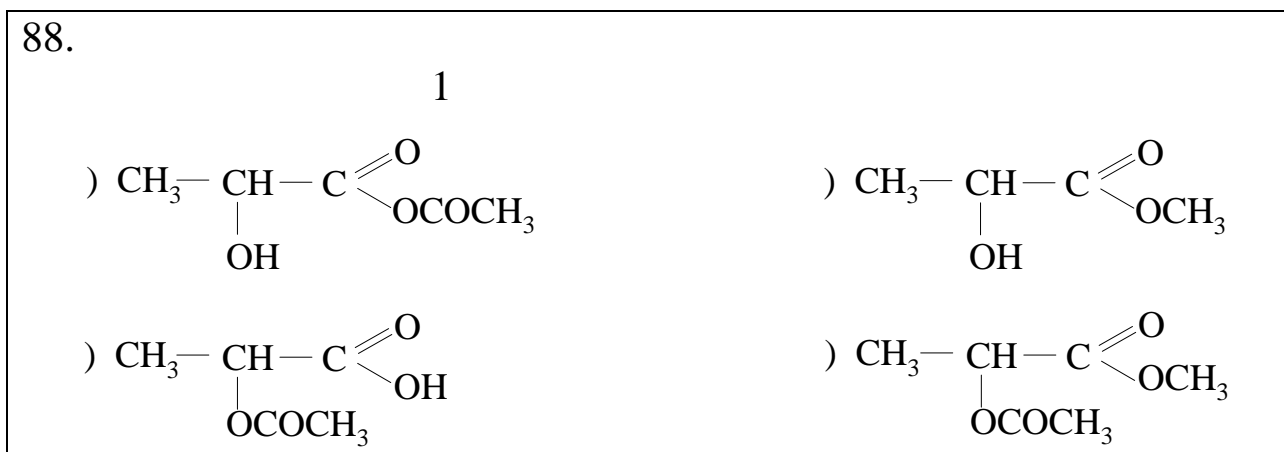
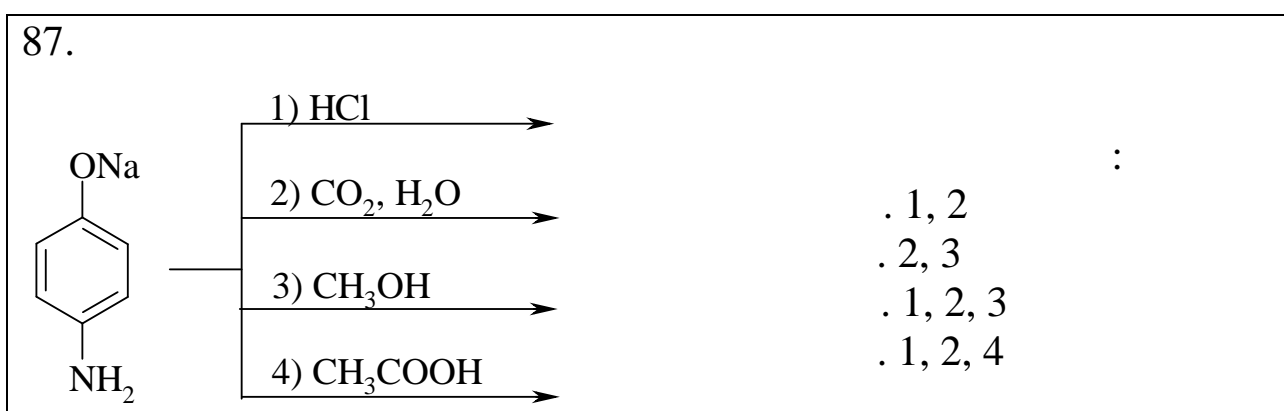
.
. .
. .
. .

80.

. -1-
. .

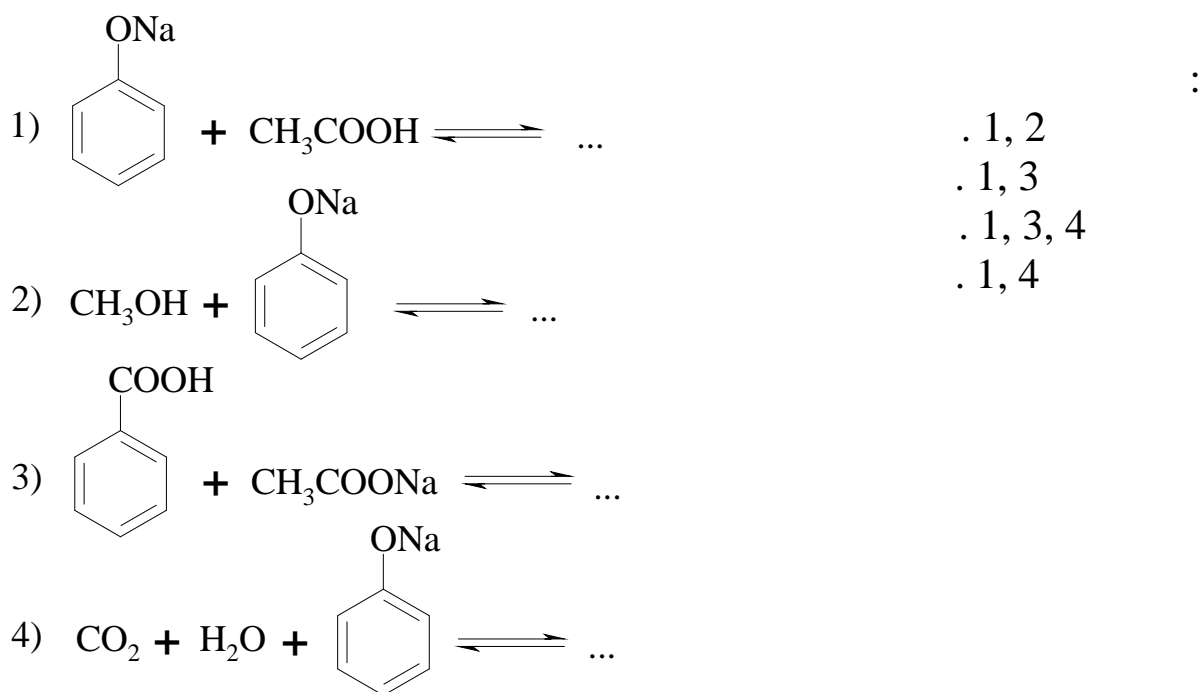
85. , ,
-
. 2,2-
. 2- . 3-

86.
.
.



89.
-1- (,
,
,
)
.

90.



91.

. < < <

. < < <

. < < <

. < < <

92.

(, -1-)

) (,)

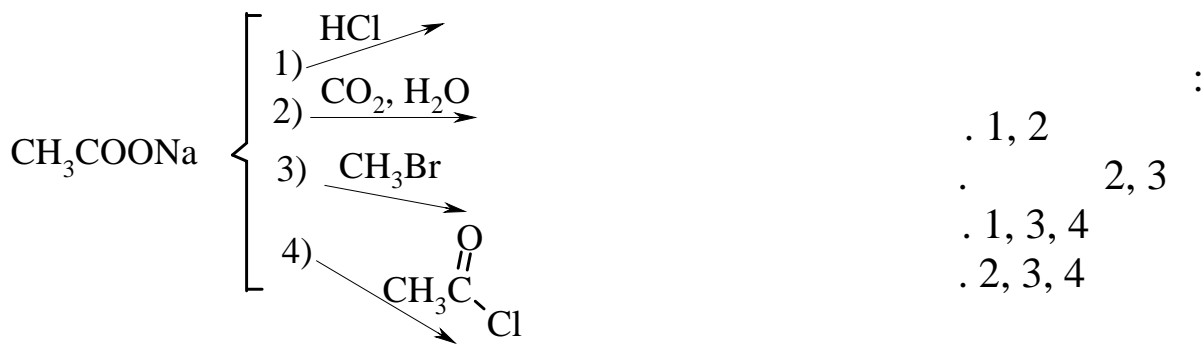
.

.

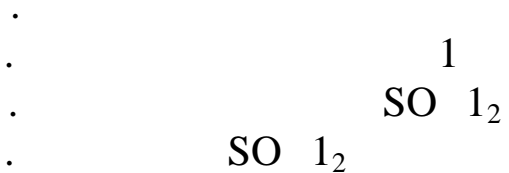
.

.

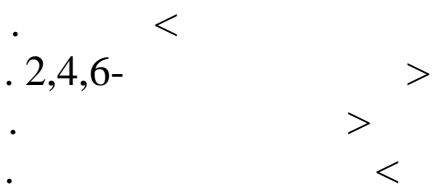
93.



94.



95.



96.



97.

1.			:
2.		. 1, 2	
3.		. 1, 3	
4.	1	. 1, 4	
		. 3, 4	

98.

1.			:
2.		. 1, 2	
3.		. 2, 3	
4.		. 2, 4	
		. 1, 4	

99. (II)

1.			:
2.		. 1, 2, 3, 4	
3.		. 1, 2	
4.		. 2, 3	
		. 1, 2, 3	

100. (II)

1.			:
2.		. 1, 2	
3.		. 1, 2, 3	
4.	-1-	. 1, 2, 4	
		. 2, 3, 4	

6. ,

1. . 1, 2, 4

2. . 1, 3, 4

3. . 1, 4

4. . 2, 4

7.

1. +

2. +

3. + . 1, 2, 3, 4

4. + . 2, 4, 5, 6

5. + NO₃ (.) . 1, 2, 4

6. + HNO₃ (.) . 2, 3, 4, 5

8.

. . -

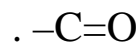
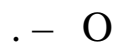
9. , ,

. .

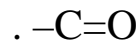
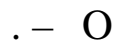
10.

. . . .

11.



12.



13.

.
.
.
.

14.

- 1.
2.
3.
4.

:
. 1, 2
. 1, 2, 3
. 1, 4
. 1, 2, 3, 4

15.

.
.
.

16.

,
,
.
.
.

17.

- . 2,3-
- . 2,3,4,5,6,-
- . 3-
- . 2,4,6-

18.

- . 6-
- .
- .
- .

19.

NaOH

- . $\text{NaH}_2\text{N}-\text{CH}_2-\text{COOH}$
- . $\text{H}_2\text{N}-\text{CH}_2-\text{COONa}$
- . $\text{H}_2\text{N}-\text{CH}_2-\text{CH}_2-\text{COONa}$
- . $\text{CH}_3-\text{CH}_2-\text{COONa}$

20.

, C-N

- .
- .

10.

1.

.

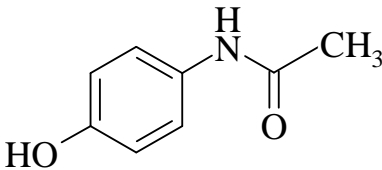
.

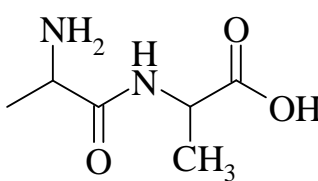
2. $(C_6H_{10}O_5)_n$

.

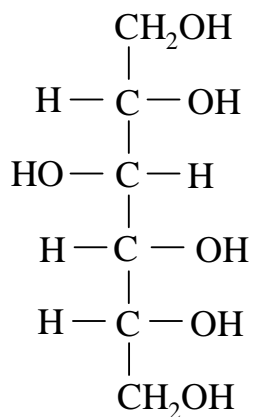
.

3.





,



.

.

4.

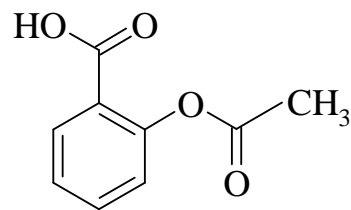
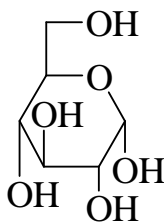
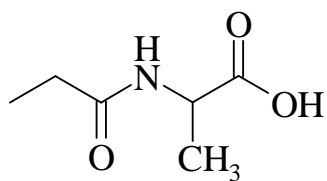
.

.

.

.

5.



.
.

.
.

6.

.
.

.
.

7. α -

.
.
.
.

,

8.

. , , ,
. , , ,
. , , ,
. , , ,

9.

1.
2.
3.
4.

α -
-
,
,

:
. 1, 3
. 1, 4
. 2, 3
. 2, 4

10. α -

1. :

2. . 1, 2, 3

3. . 2, 3

4. . 2, 3, 4

. 1, 2, 3, 4

11. -

.

.

12. , - ,

. u(OH)₂

. (I)

. Cu(OH)₂

13.

.

.

14.

1. :

2. . 1, 2

3. . 1, 3

4. . 2, 3, 4

. 1, 2, 3, 4



15.

. .
. .

16.

. α - .
. .

17.

. CH_3COCl . $\text{Ag}_2\text{O}/\text{NH}_3$. $\text{Cu}(\text{OH})_2$. $(\text{CH}_3\text{CO})_2\text{O}$

18.

. .
. .

19.

(II)

. .
. .

20.

. ,
. . ,

21.

1.		:
2.		. 1, 2, 3
3.		. 2, 3
4.		. 2, 3, 4
		. 1, 2, 3, 4

22.

.		
.	.	-2-

23.

.		
.	.	

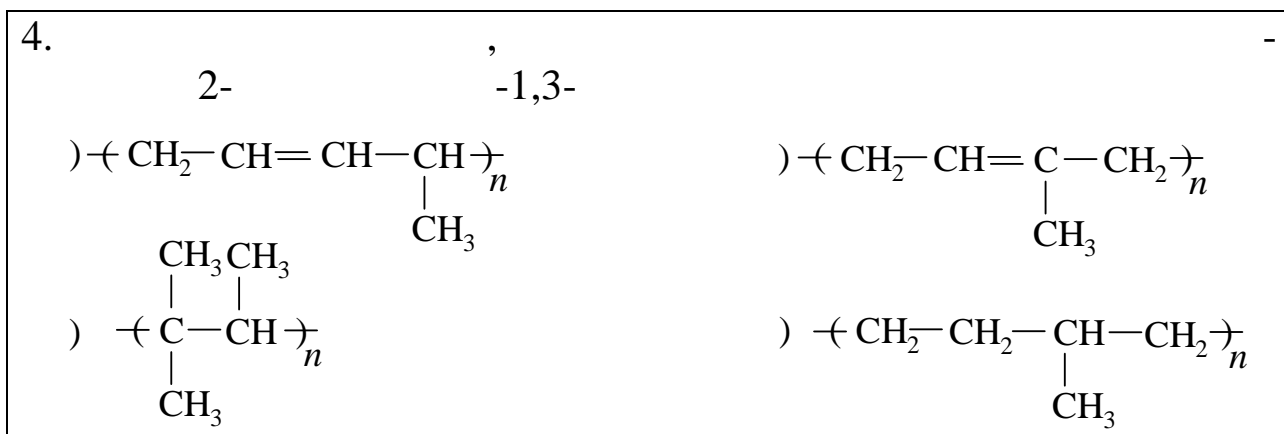
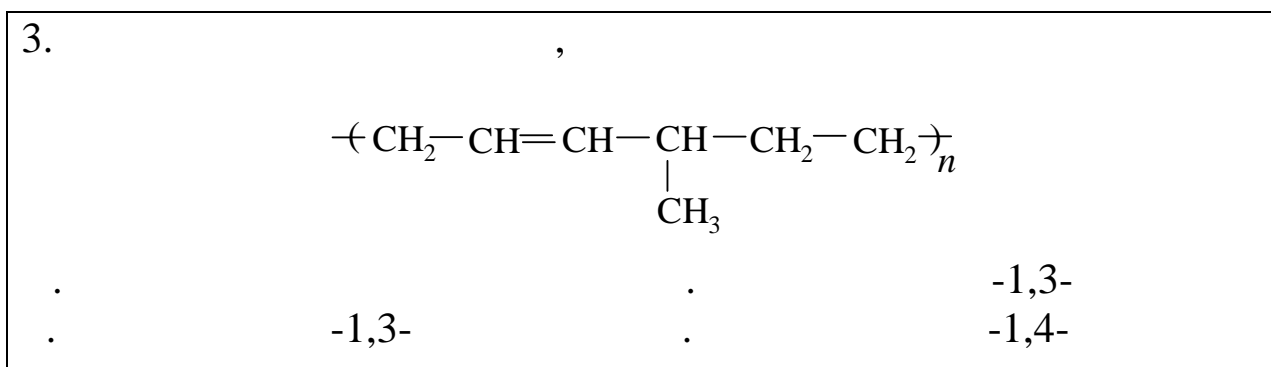
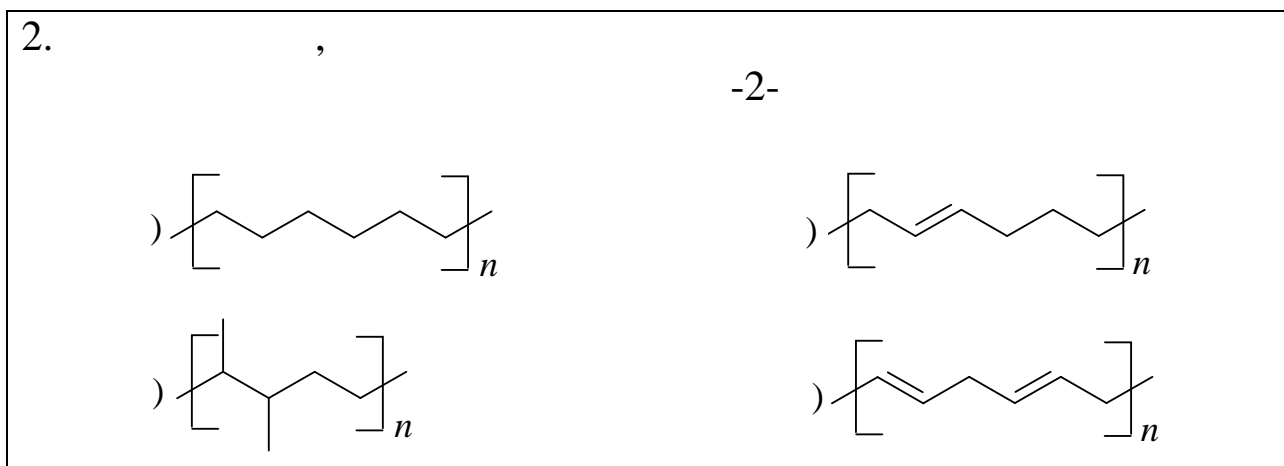
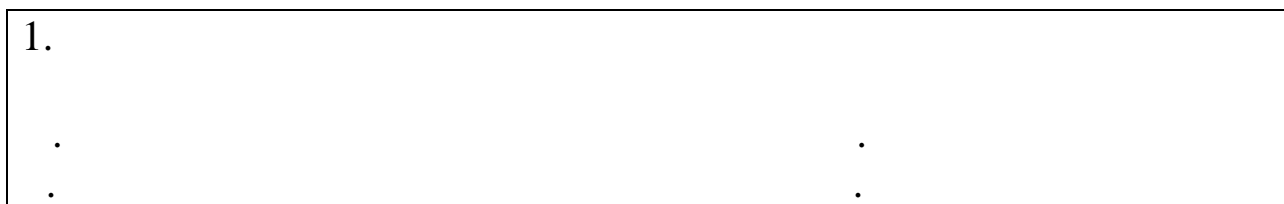
24.

1.		:
2.	-	. 1, 2
3.		. 2, 3
4.		. 2, 4
		. 2

25.

.		
.		
.		
.		

11.



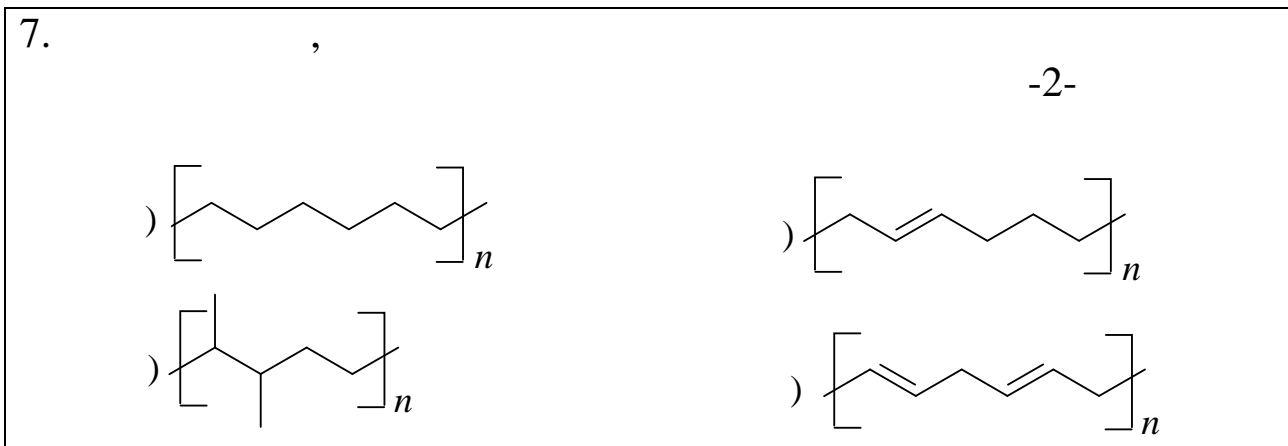
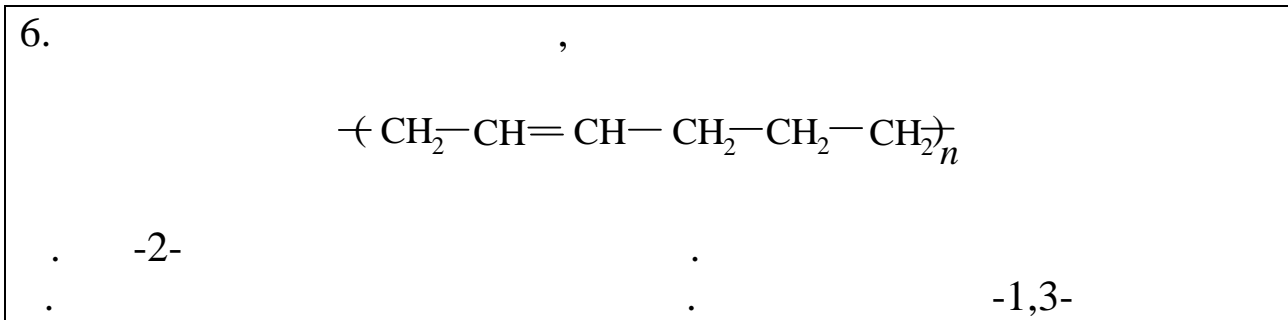
5.

.

.

.

.



8.

.

.

9.

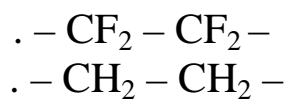
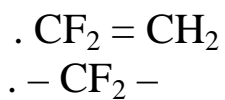
.

.

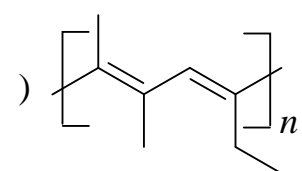
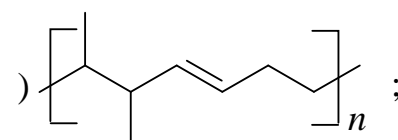
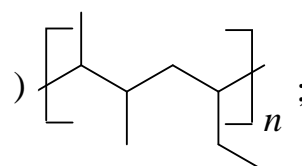
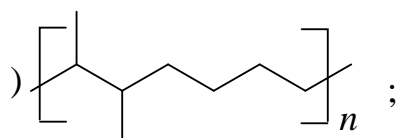
.

.

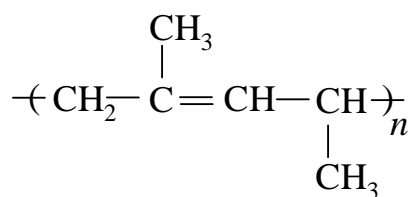
10.



11.



12.

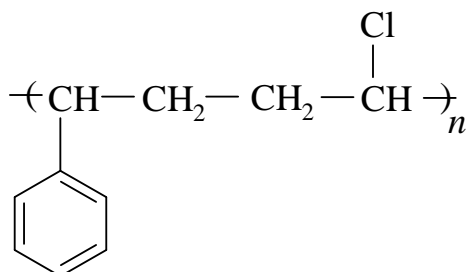


\cdot
 \cdot

$\cdot 3-$
 $\cdot 2-$

$-1,3-$
 $-1,3-$

13.

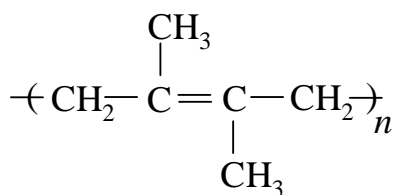


\cdot
 \cdot

3-

\cdot
 \cdot

14.



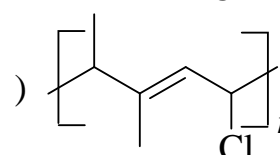
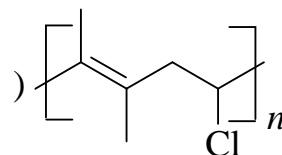
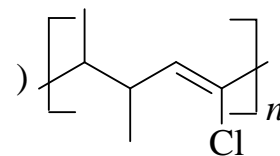
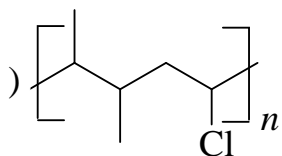
. -1-
 . -1-

. 2,3-
 .

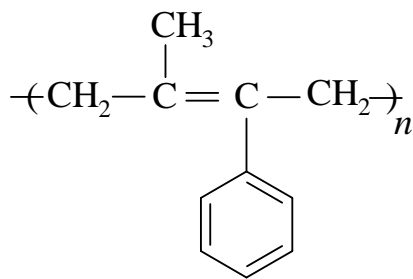
-1,3-

15.

-2-



16.



. 2-

-3-

-2-

. 2-

-3-

-1,3-

. 2-

-3-

-1-

. 2-

-3-

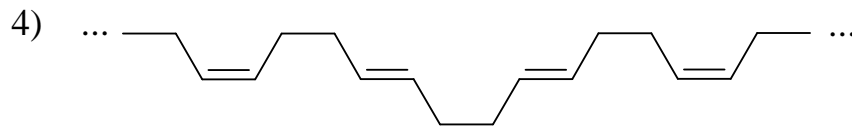
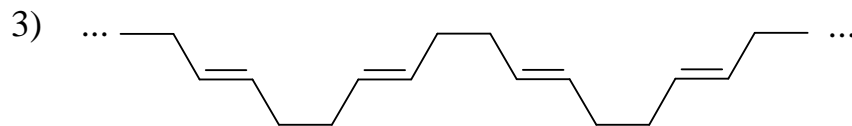
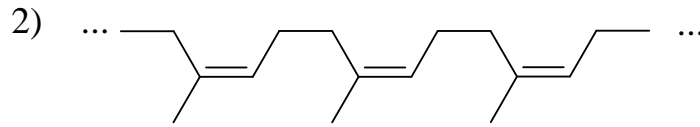
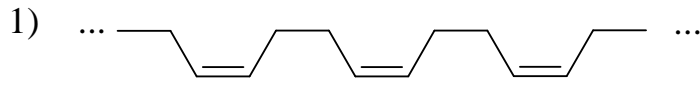
-1,4-

17.

.
 .

.
 .

18.



- . 1, 2
- . 1, 3
- . 2, 4
- . 3, 4

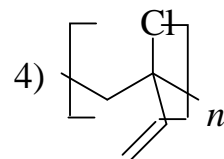
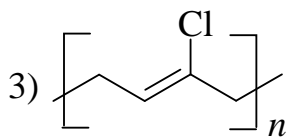
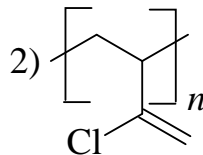
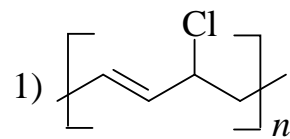
:

19.

)

(2-

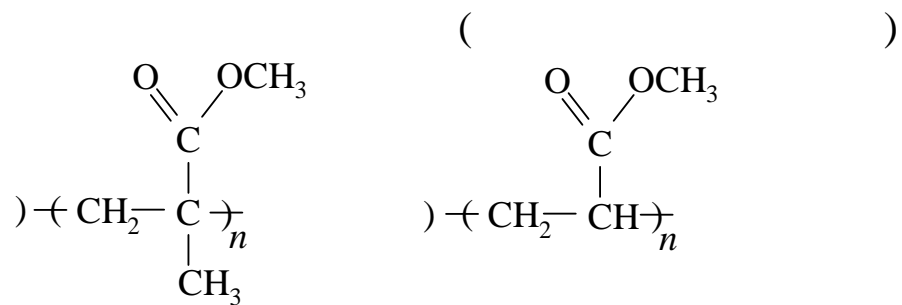
-1,3-



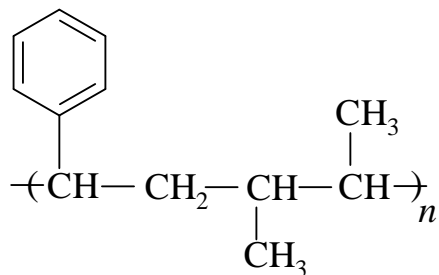
- . 1, 2
- . 1, 2, 3
- . 2, 3, 4
- . 3, 4

:

20.

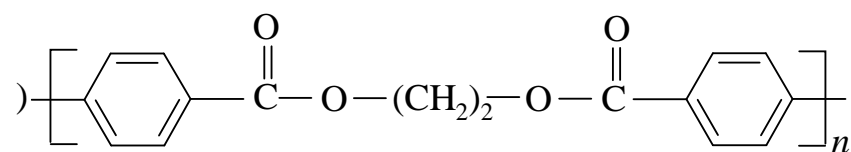
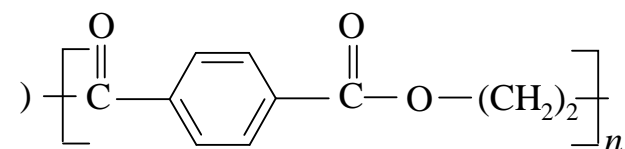
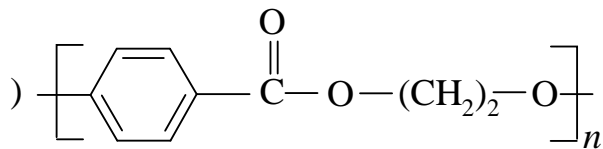
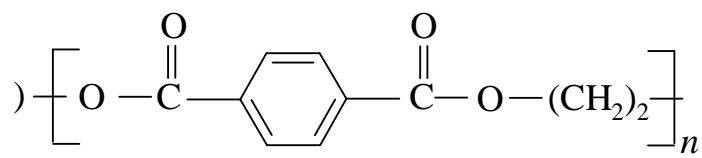


21.



. 2-
 . 2- -1,3-
 . -2-
 .

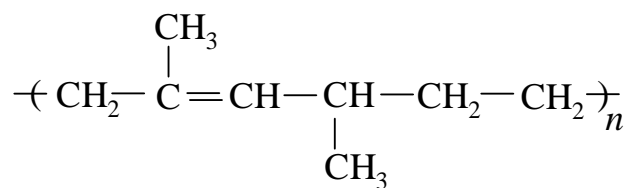
22.



23.

.
 . ε- .

24.



. 2-

-1,3-

. -1-

2-

.

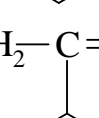
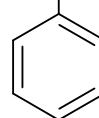
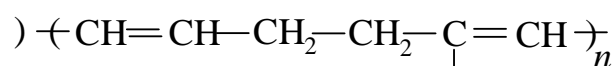
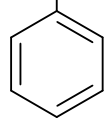
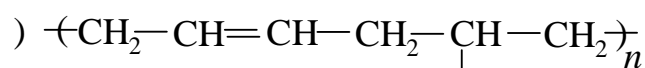
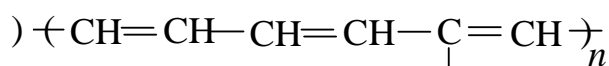
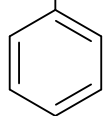
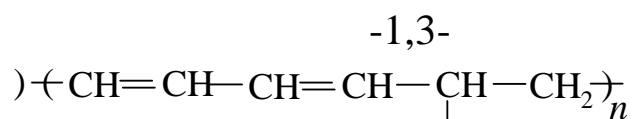
2-

-1,3-

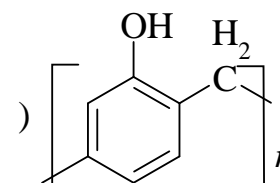
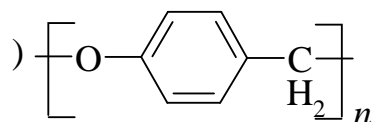
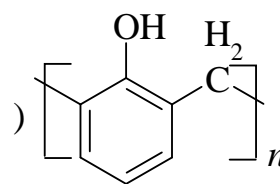
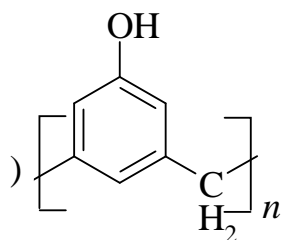
.

2-

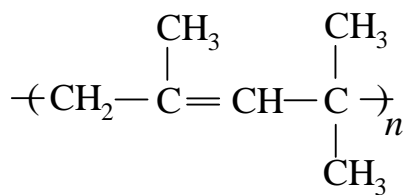
25.



26.



27.



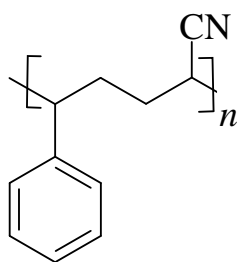
. 2,4-

-1,3-

. 2,3-
. 2-

-1,3-
-1,3-

28.



.
. .
. .
. .

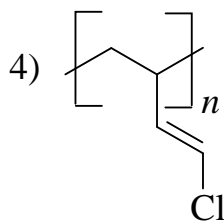
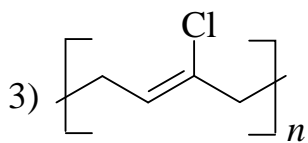
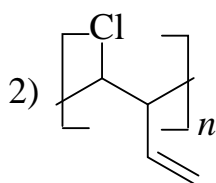
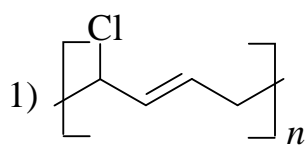
1-

(2= - N)
-1,3-

29.

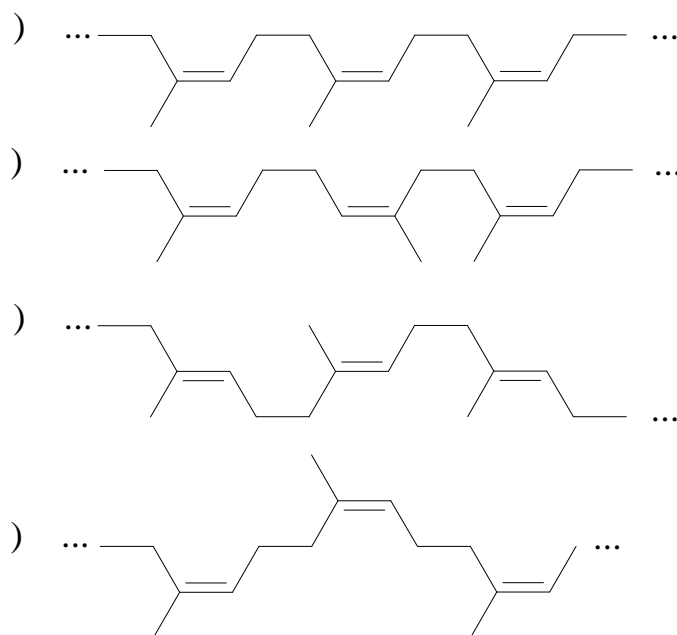
1-

-1,3-

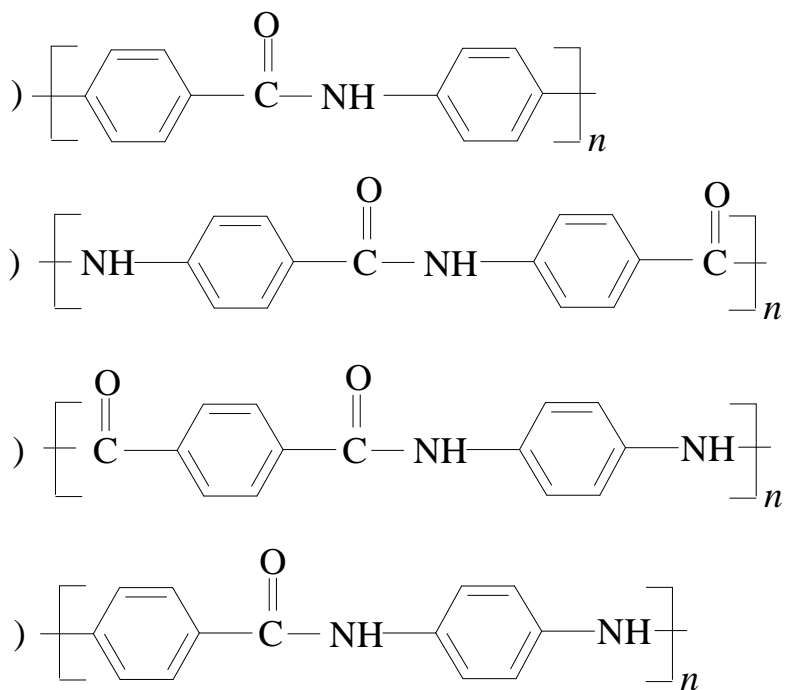


. 1, 2 :
. 1, 2, 3
. 1, 2, 4
. 3, 4

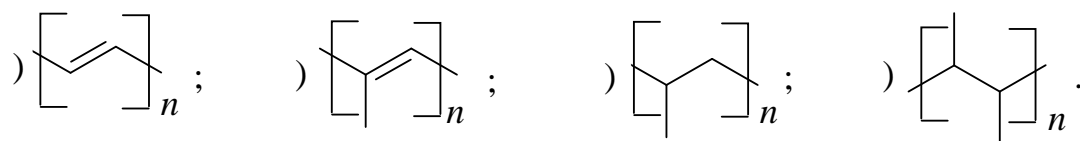
30.



31.

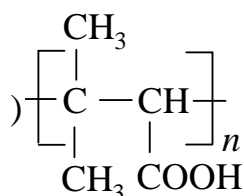
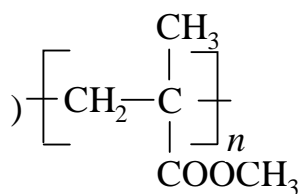
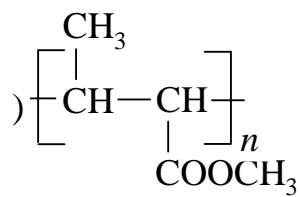
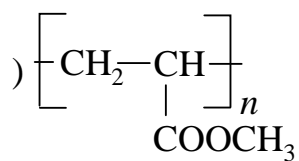


32.



33.

()



34.

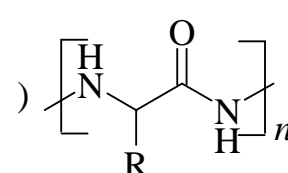
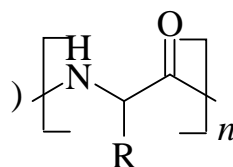
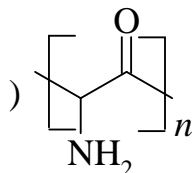
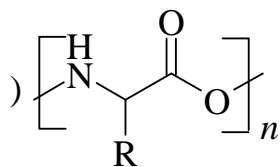
—

·
·

·
·

35.

—



36.

—

·
·

·
·

37.

·
·

·
·

38. —
.
.
.
.

39.
.
.
.
.

40. ,
.1 1 .1 4
.1 2 .4 4

41. —
.
.
.
.

42. —
.
.
.
.



43.

. α - . -

44.

()

1) $\text{HOOC}-(\text{CH}_2)_2-\underset{\text{NH}_2}{\text{CH}}-\text{COOH}$

2) $\text{NH}_2-(\text{CH}_2)_5-\text{COOH}$

3) $\text{H}_2\text{N}-\text{C}_6\text{H}_4-\text{COOH}$

4) $\text{C}_6\text{H}_5-\underset{\text{H}_2}{\underset{\text{H}}{\text{C}}}-\text{COOH}$

. 1, 2
 . 2, 3
 . 1, 2, 3
 . 1, 4

45.

1) $\text{C}_6\text{H}_5-\text{CH}_2-\underset{\text{H}_2\text{N}}{\text{CH}}-\text{COOH}$

2) $\text{H}_2\text{N}-\text{CH}_2-\text{COOH}$

3) $\text{H}_2\text{N}-\text{CH}_2-\text{CH}_2-\text{COOH}$

4) $\text{NH}_2-(\text{CH}_2)_5-\text{COOH}$

. 1, 2
 . 2, 3
 . 1, 2, 3
 . 1, 2, 4

46.

1. .
 2. . 1, 2, 4
 3. . 1, 3
 4. . 1, 3, 4
 . 1, 2, 3, 4

47. ,
,
.
. . . .

48. ,
,
.
. . . .

49. ,
.
.
. . . .

50. ,
.
.
.
.
.
,

51. :
1. 1, 2
2. . 1, 2
3. . 1, 4
4. . 1, 2, 4
. 1, 2, 3, 4



1. . . . : « -2000», 2002.-
525 .
2. . . . : ., 2005.- 639 .
3. . . . : ,
1997.- 430 .
4. . . . : . / . .
.- 8- . . .- : « » , 2003.-
768 .

1.	.	3
2.	.	4
3.	.	10
4.	.	17
5.	.	20
6.	.	23
7.	.	28
8.	.	40
9.	.	47
10.	.	68
11.	.	72
		77
		90



..
..

« (-) »

..

,

20__ . . 29.

60x84 1/16.

Times New Roman Cyr.

. . . 4,5. .- . . 5.
. 516/08. . .

