

OLIMPIADA DE CHIMIE
etapa județeană/municipiului București

22 februarie 2020

Clasa a XI-a

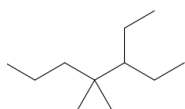
BAREM

Orice modalitate corectă de rezolvare a cerințelor va fi punctată corespunzător.

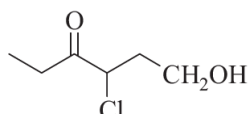
SUBIECTUL I

(25 de puncte)

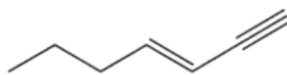
a.



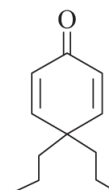
(A)



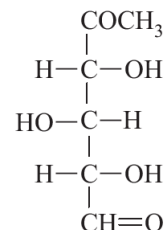
(B)



(C)



(D)



(E)

A, B, C, D (4x0,5p = 2p)

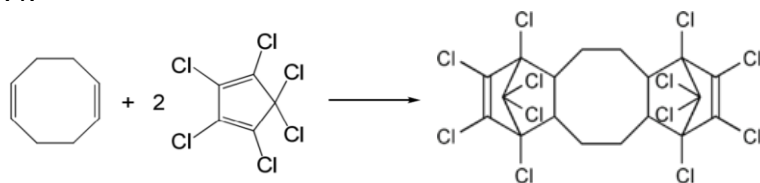
E - (1p)

b1. 3,3,5-trimetil-6-heptin-2-ol (1p)

b.2. NE = 7 (1p)

b.3. 12 atomi (1p)

b.4.

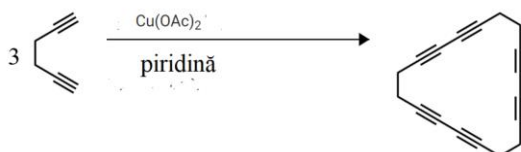


Ecuția reacției - (2p)

1,5-octadienă - (1p)

1,2,3,4,5,5-hexacloro-1,3-ciclopentadienă - (1p)

b.5.

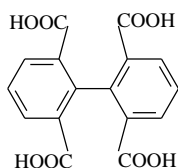


Ecuția reacției (2p)

b.6. ecuațiile reacțiilor - (3p)

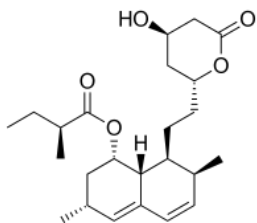
- eliminarea grupei $-NH_2$ (de exemplu: diazotare, eliminarea grupei diazo cu H_3PO_2)

- oxidare la catena laterală.



-nu are activitate optică - (1p)

c.1. 8 atomi de carbon asimetric - (1p)



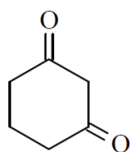
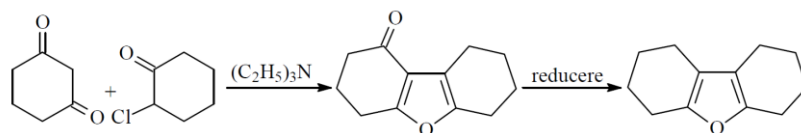
c.2.- (1p)

Ecuția reacției de reducere a grupei carbonil fără a distruge legăturile duble omogene.

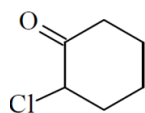
c.3.- (1p)

Compusul Y are caracter aromatic

c.4

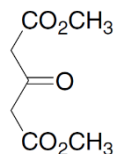


(1,5 p)

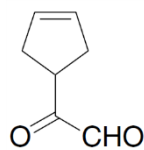


(1,5 p)

c.5.



(1,5p)



(1,5p)

SUBIECTUL al II-lea

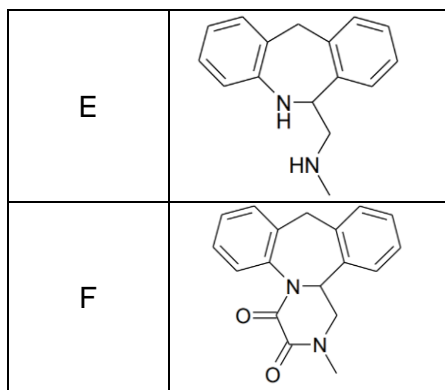
(25 de puncte)

Subiectul A.....12 puncte

1. 3 ecuații x 1p = 3p

2.

Compusul	Formula structurală
A	
B	
C	
D	



(6x1,5p = 9 p)

Subiectul B.....13 puncte

1. 2 atomi de carbon asimetric (1p)

2.

Compusul	Formula structurală
A	
B	
D	
E	
F	
G	

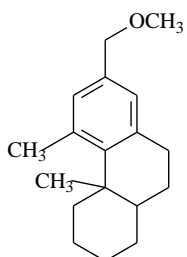
(6x 2p = 12p)

SUBIECTUL al III-lea

(20 de puncte)

Subiectul A. 11 puncte

1.



A - (2p)

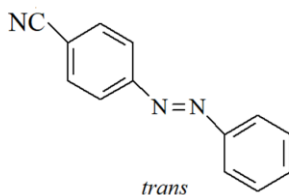
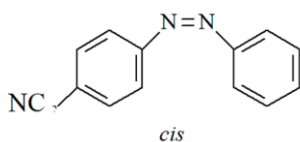


B - (3p)

2.

4 ecuații –(4x1p = 4p)

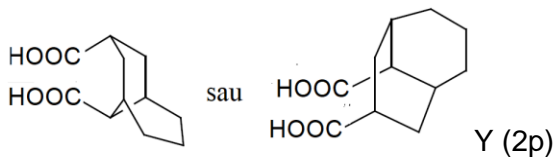
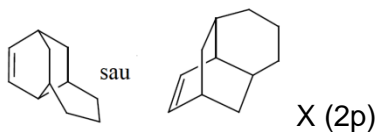
Formulele celor 2 stereoizomeri –(2x 1p=2p)



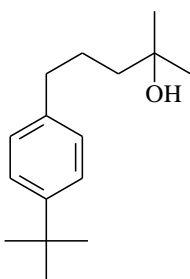
Subiectul B. 9 puncte

1. 5-(4-pentenil)-1,3-ciclohexadienă (1p)

2.

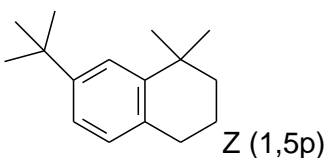


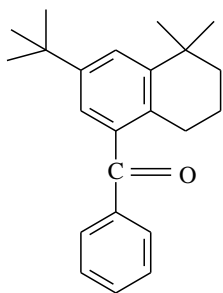
3.



(1p)

4.





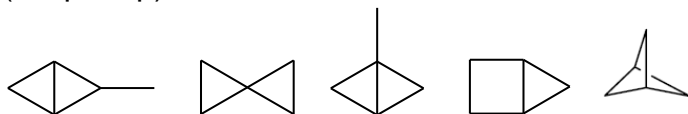
W (1,5 p)

SUBIECTUL al IV-lea

(30 puncte)

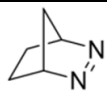
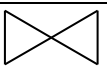
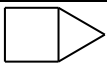
Subiectul A.....18 puncte

(5x1p = 5p)



2.

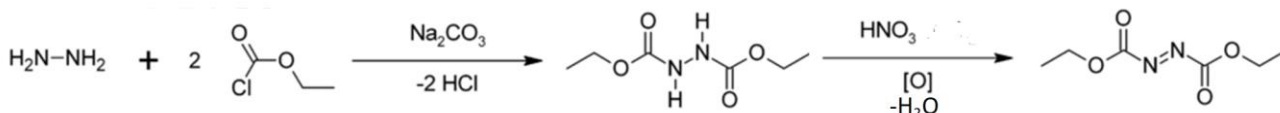
Compusul	Formula de structură
A	$\text{CH}_2 = \text{O}$
B	$\text{CH}_3 - \text{CH} = \text{O}$
D	
E	
F	
G	
H	
J	

K	
X	
Y	

(11x1p = 11p)

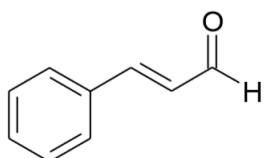
3. 2 ecuații (2x0,75p = 1,5p)

(L) $\text{NH}_2\text{-NH}_2$, (0,5p)



Subiectul B.....12 puncte

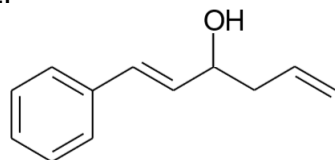
1.



A

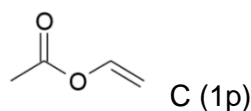
(2p) (se acordă numai 1p dacă formula de structură este corectă, dar nu este reprezentat izomerul trans)

2.



B (2p)

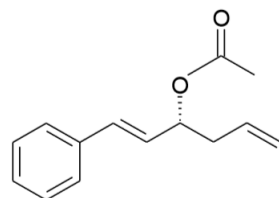
3.



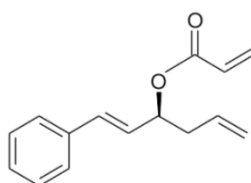
C (1p)

Acetat de vinil-(1p)

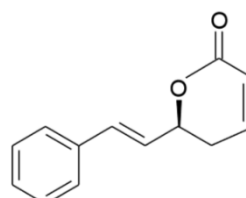
4.



(D)



(E)



(F)

(3x2p=6p)

Se acordă numai 1p dacă nu este prezentată formula de structură a stereoisomerului respectiv (3x1p = 3 p)

Barem elaborat de:

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