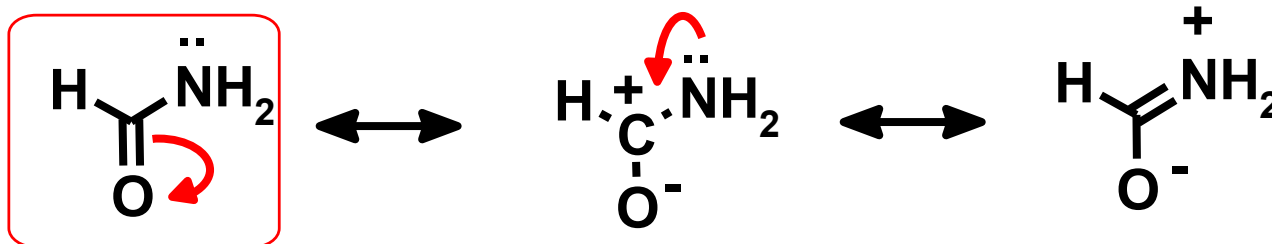


Esercitazione n. 7 - Risonanza.

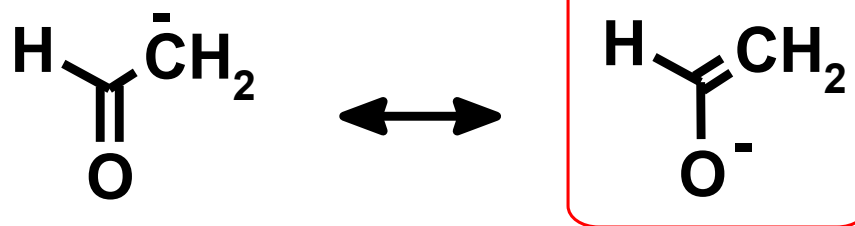
1. Quale delle strutture di risonanza per ognuna delle seguenti serie contribuisce di più alla descrizione della struttura reale?

contributo maggiore

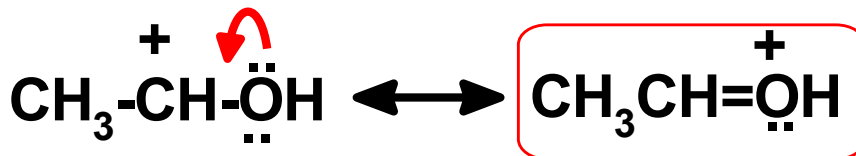
a)

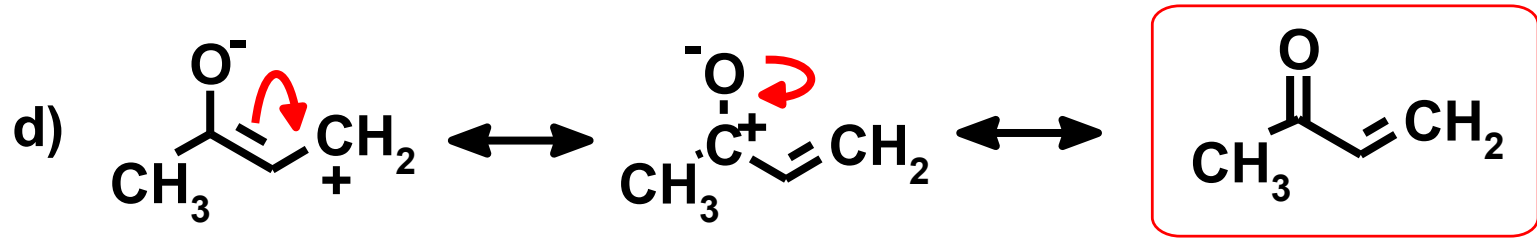


b)



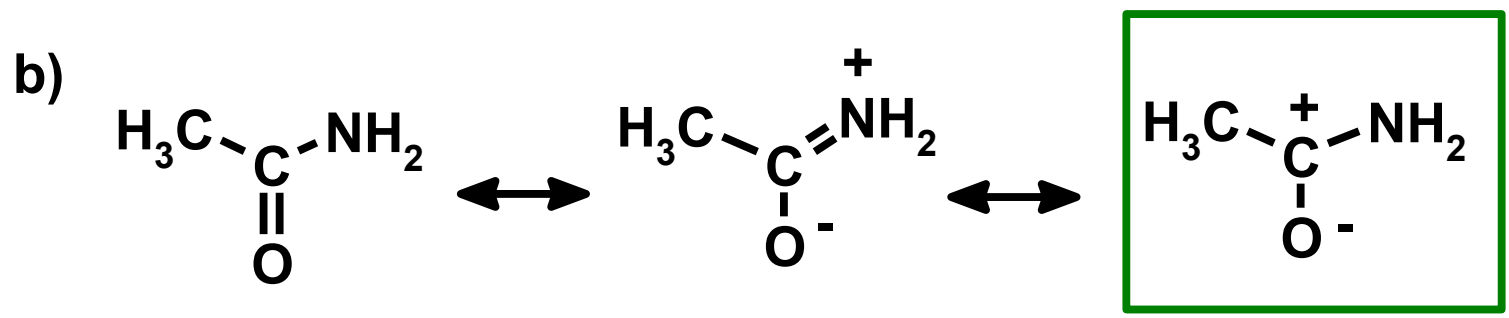
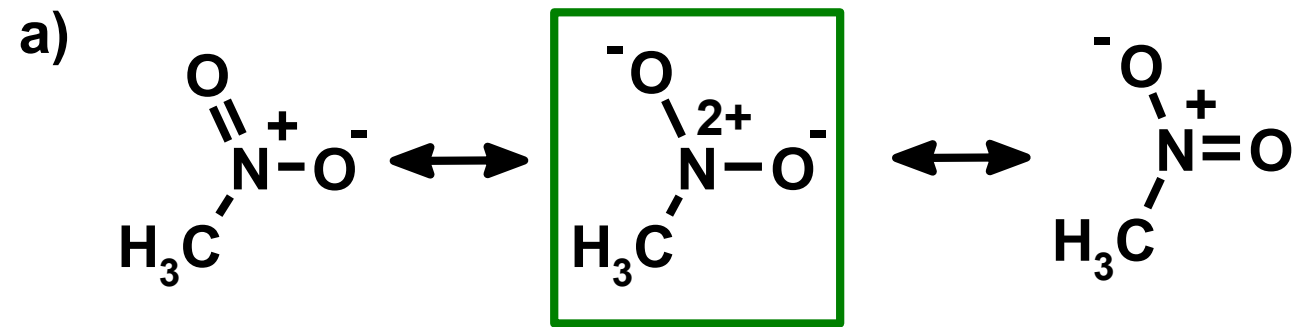
c)

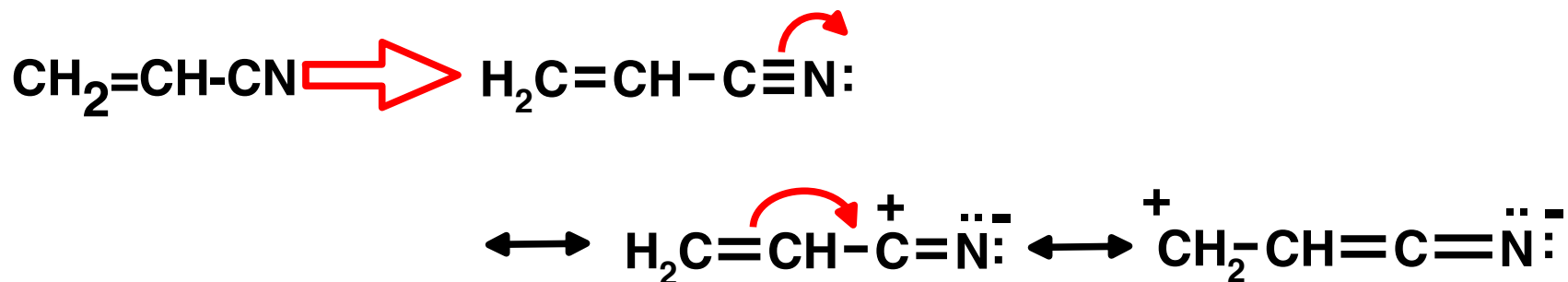
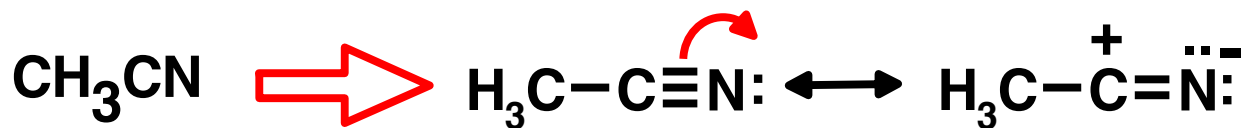
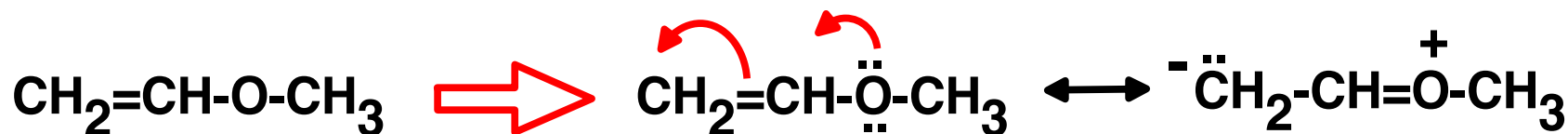
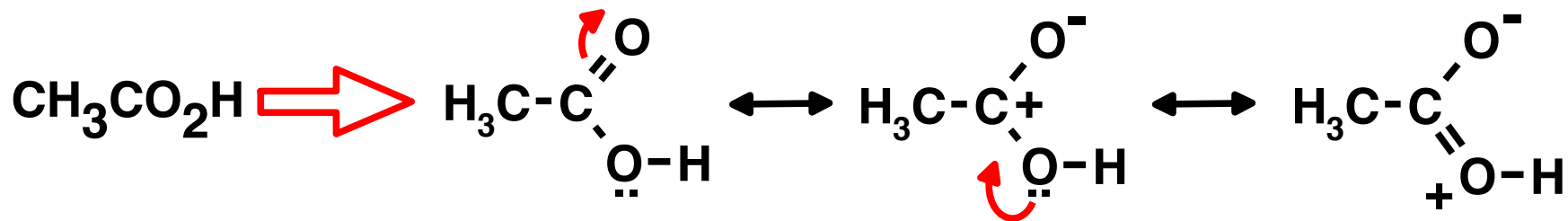




2. Quale delle strutture di risonanza per ognuna delle seguenti serie contribuisce di *meno* alla descrizione della struttura reale?

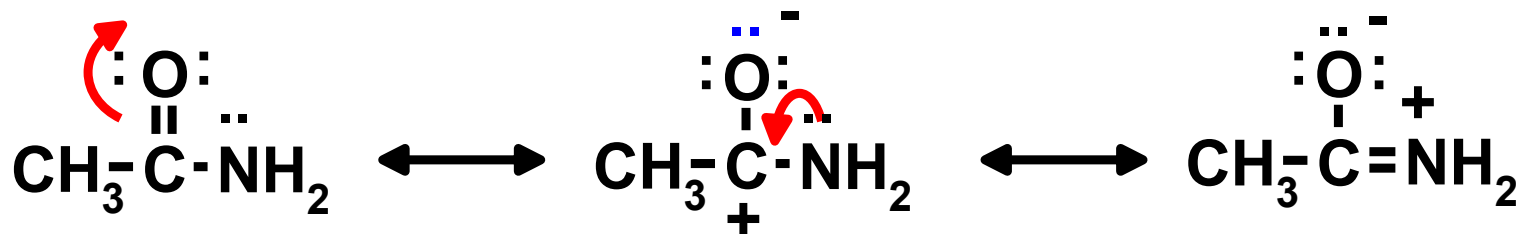
contributo *minore*



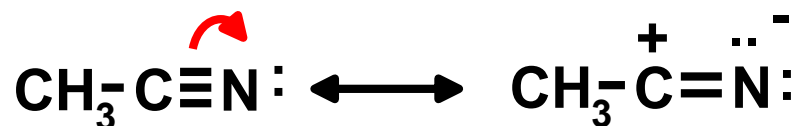


4. Scrivere le strutture canoniche di risonanza dei seguenti composti:

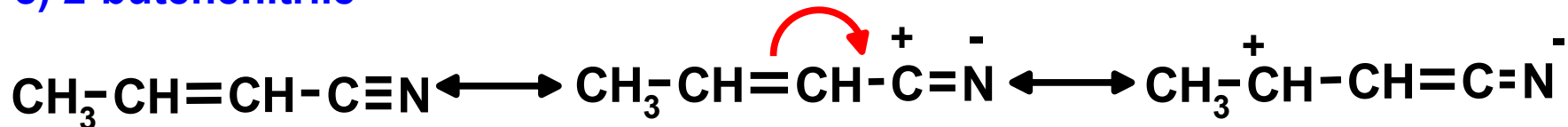
a) acetammide (=etanammide)



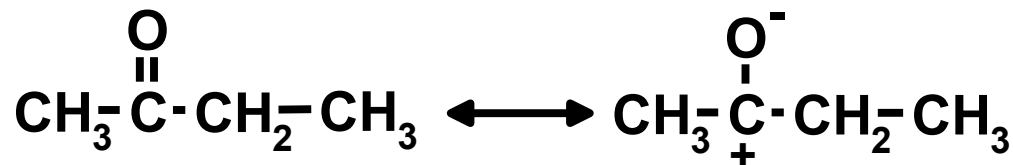
b) acetonitrile (= etanonitrile)



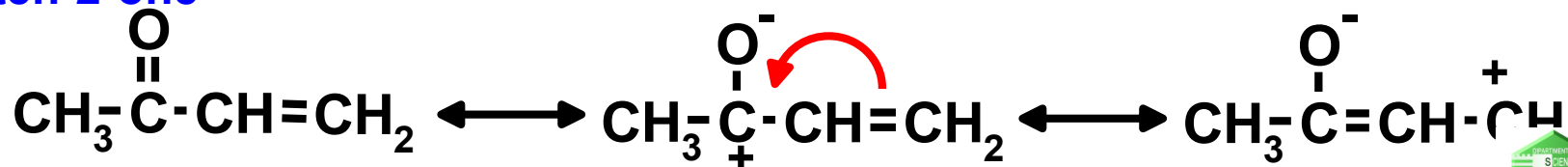
c) 2-butenitrile



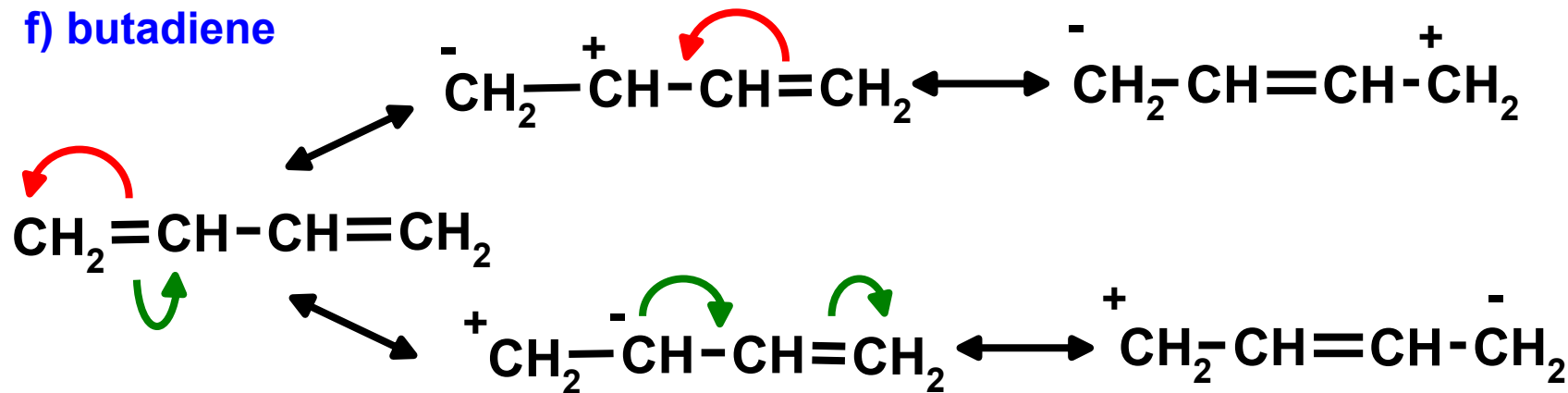
d) butanone



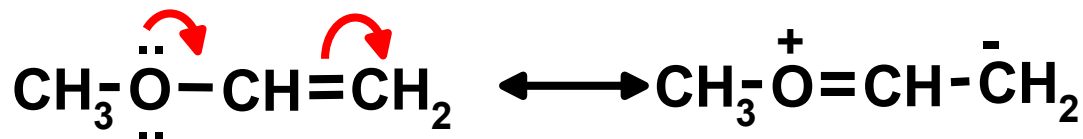
e) 3-buten-2-one



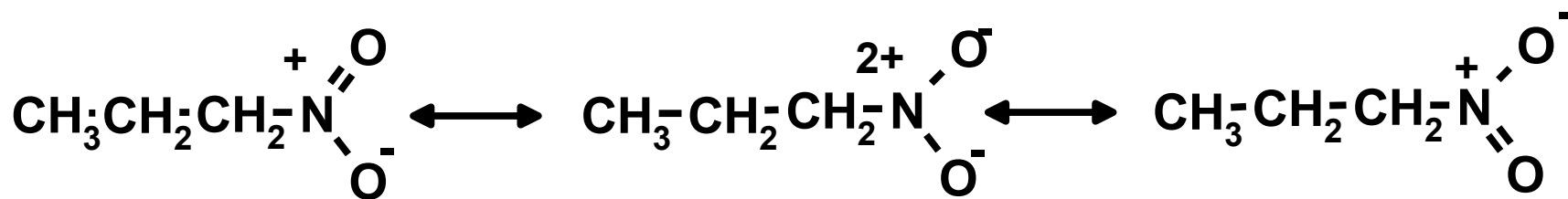
f) butadiene



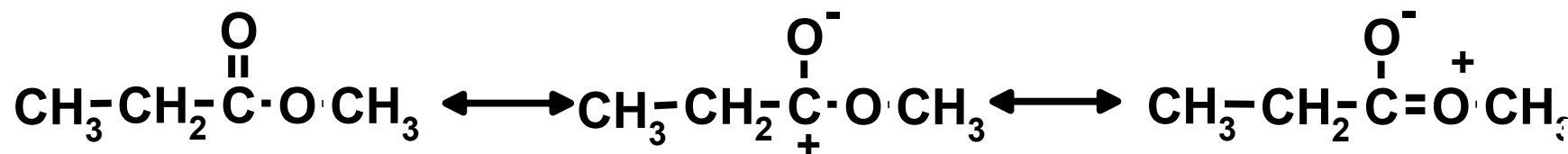
g) metil vinil etere



h) 1-nitropropano



i) propanoato di metile



5. Dare il nome ai seguenti composti. Sulla base della regola di Hückel, indicare quali sono aromatici e quali no. Spiegare i motivi della scelta.

Regola di Hückel: Anelli monociclici planari, in cui tutti gli atomi dell'anello partecipano con un orbitale p alla formazione degli orbitali molecolari, sono aromatici se hanno negli orbitali p un numero di elettroni pari a $(4n + 2)$ dove n è un numero intero della serie naturale



ciclopropene

NO: c'è C sp^3



catione ciclopropenilico

SI': 2 elettroni p ($n = 0$)



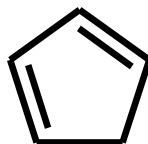
anione ciclopropenato

NO: 4 elettroni p



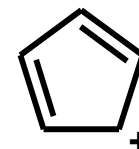
ciclobutadiene

NO: 4 elettroni p



ciclopentadiene

NO: c'è C sp^3



catione ciclopentadienilico
NO: 4 elettroni p

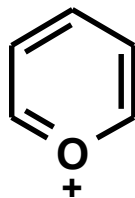


tiaciclopentadien

e

SI' : 6 elettroni p (n = 1)

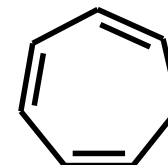
4 dei C + 2 di S



catione pirilio

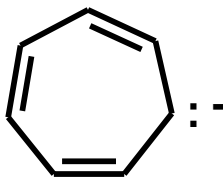
SI' : 6 elettroni p (n = 1)

5 dei C + 1 di N



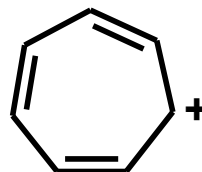
cicloeptatriene

NO: c'è C sp³



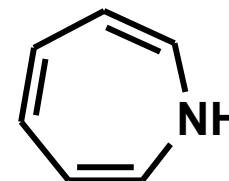
anione cicloeptatrienato

NO: 8 elettroni p



catione cicloeptatrienilio

SI' : 6 elettroni p (n = 1)

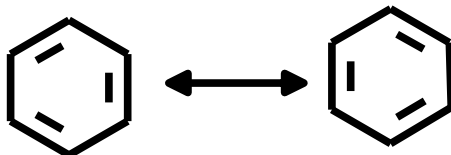


1H-azacicloeptatriene

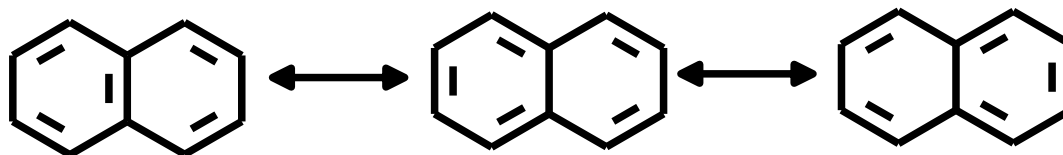
NO: 4 elettroni p
6 dei C + 2 di N

7. Scrivere le strutture canoniche di risonanza dei seguenti composti:

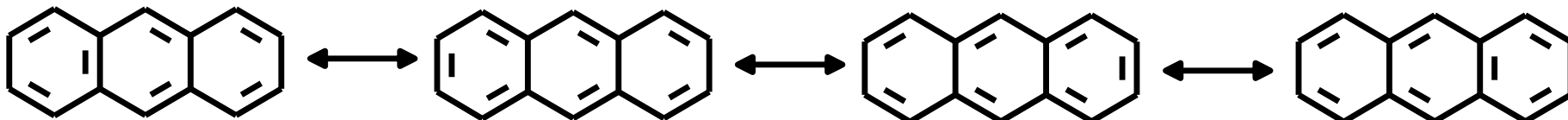
a) benzene



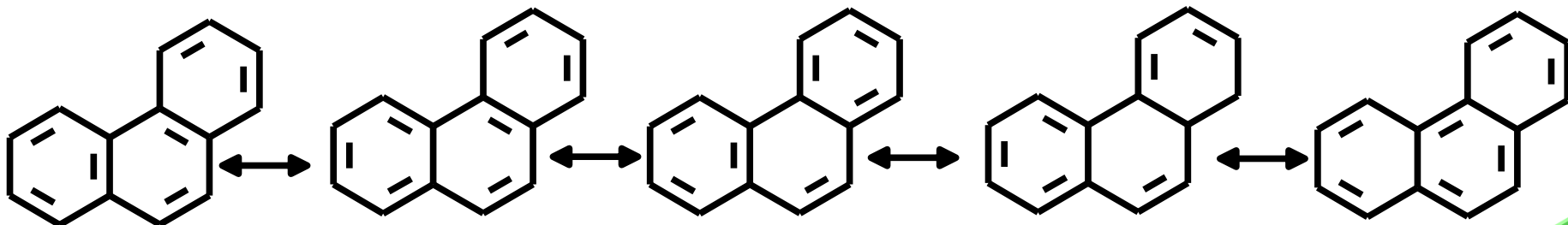
b) naftalene



c) antracene

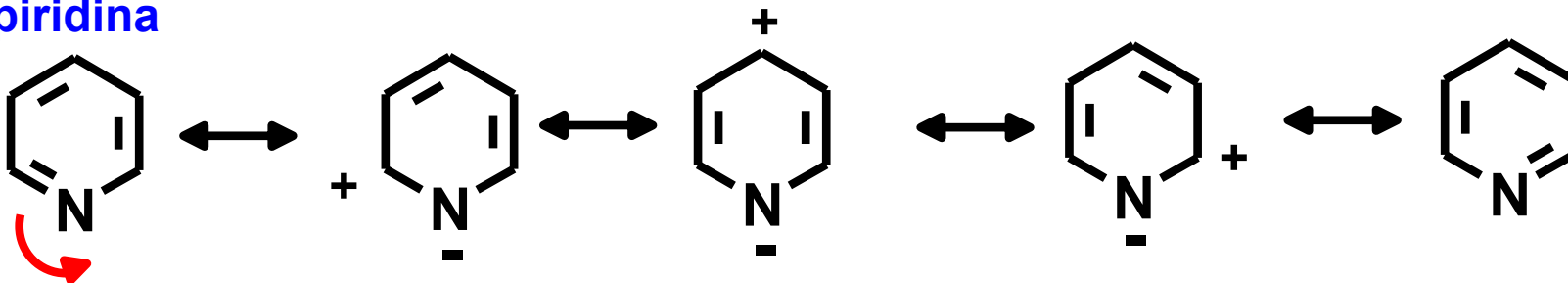


d) fenantrene

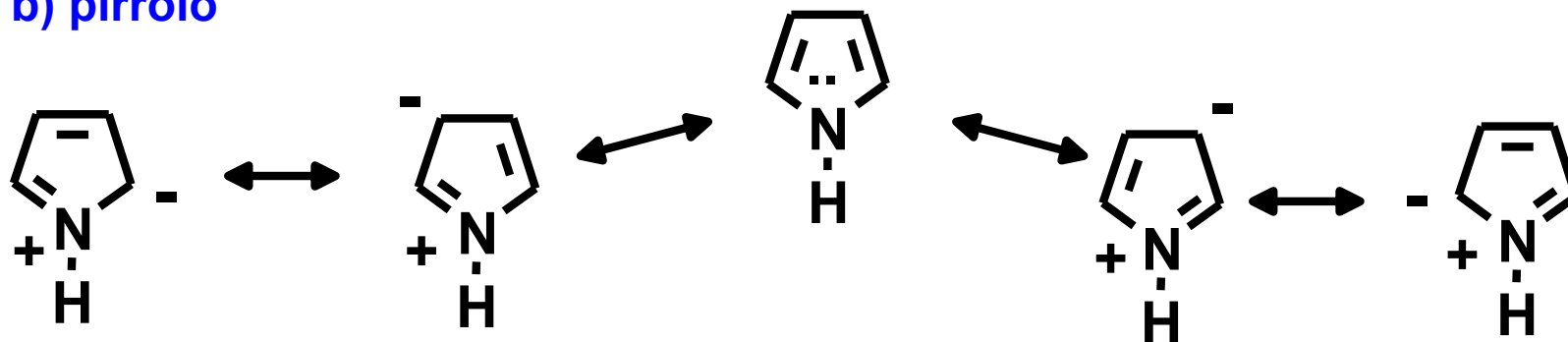


8. Scrivere le strutture di risonanza dei seguenti composti:

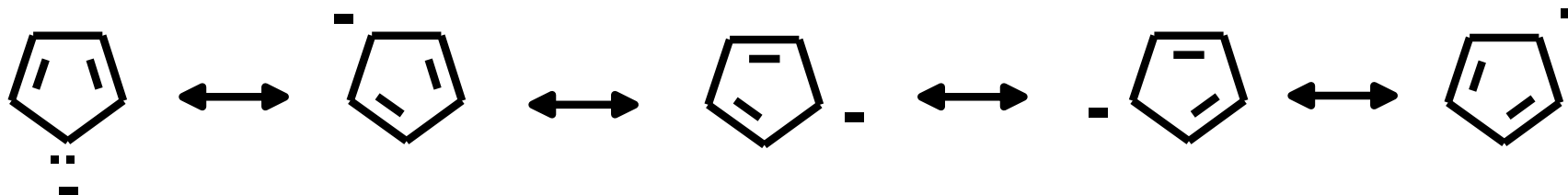
a) piridina



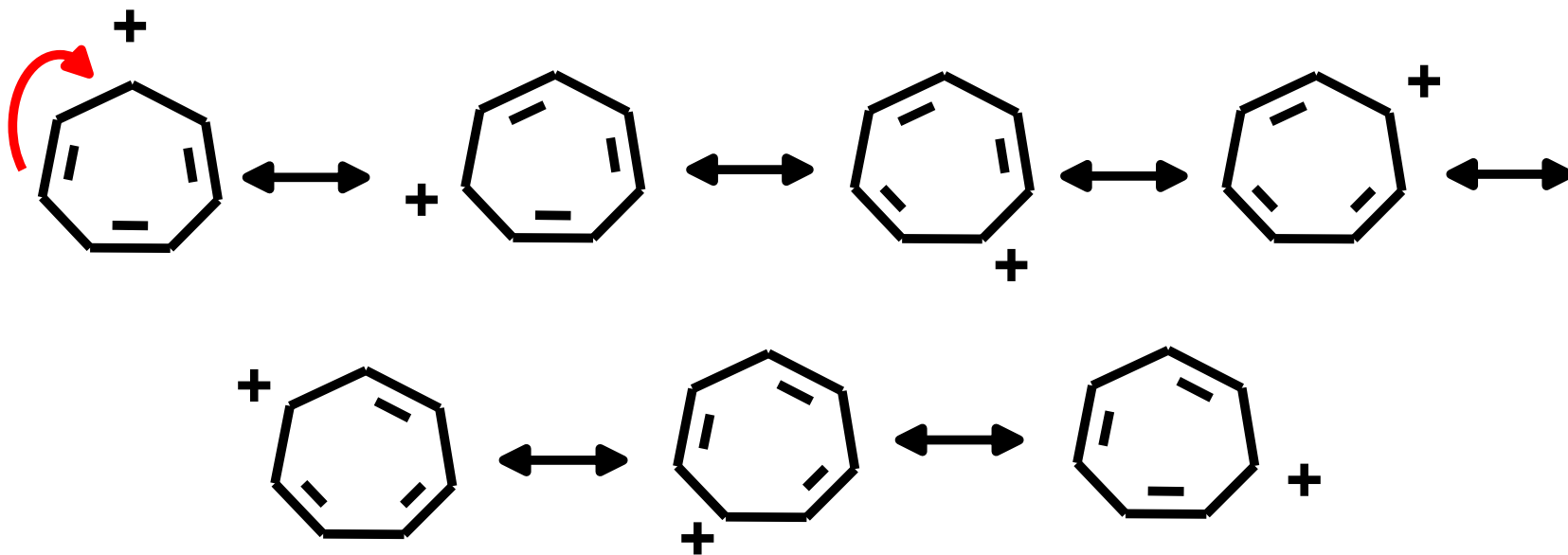
b) pirrolo



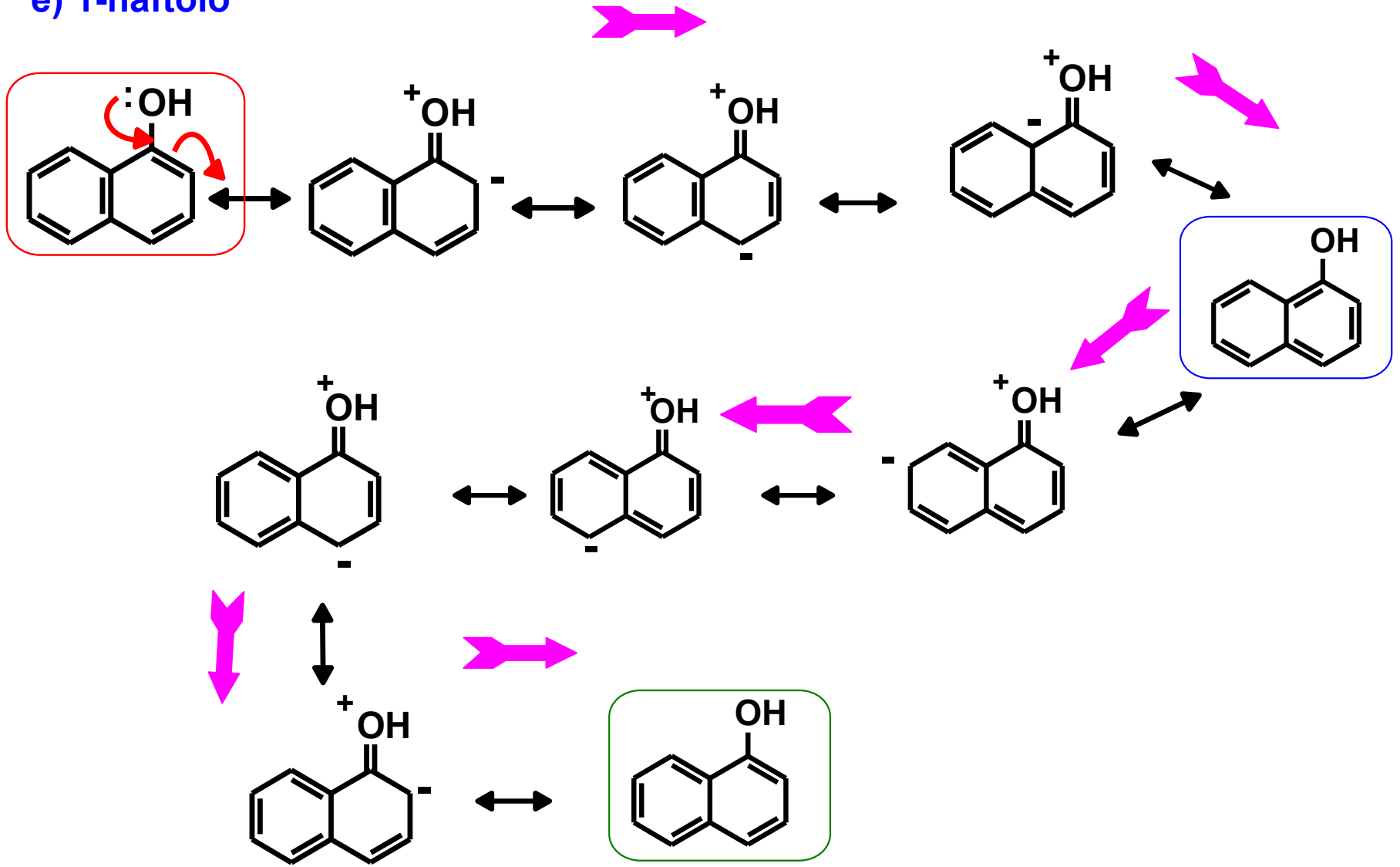
c) anione ciclopentadienato



d) catione cicloeptatrienilico



e) 1-naftolo



f) 2-naftolo

