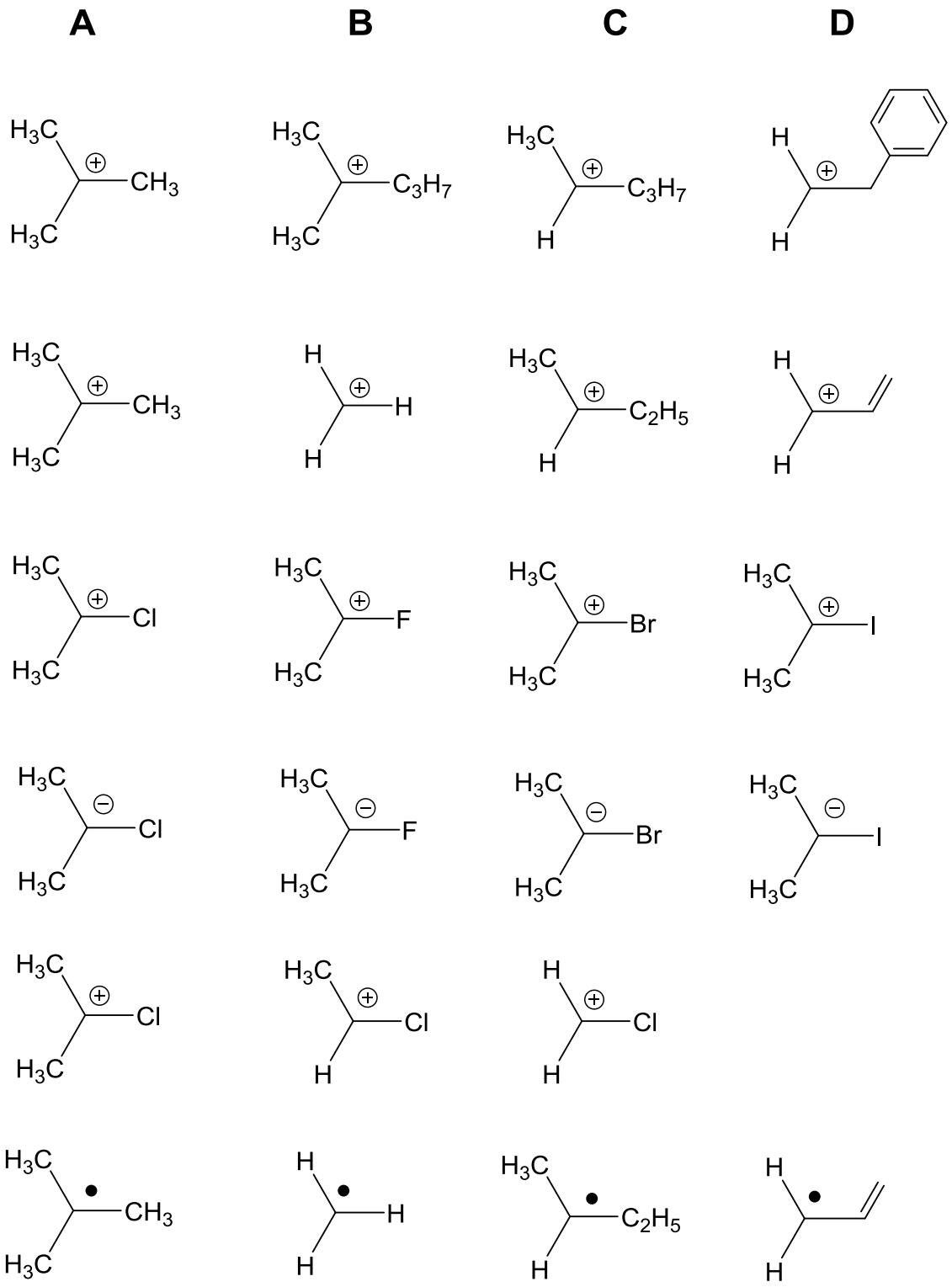
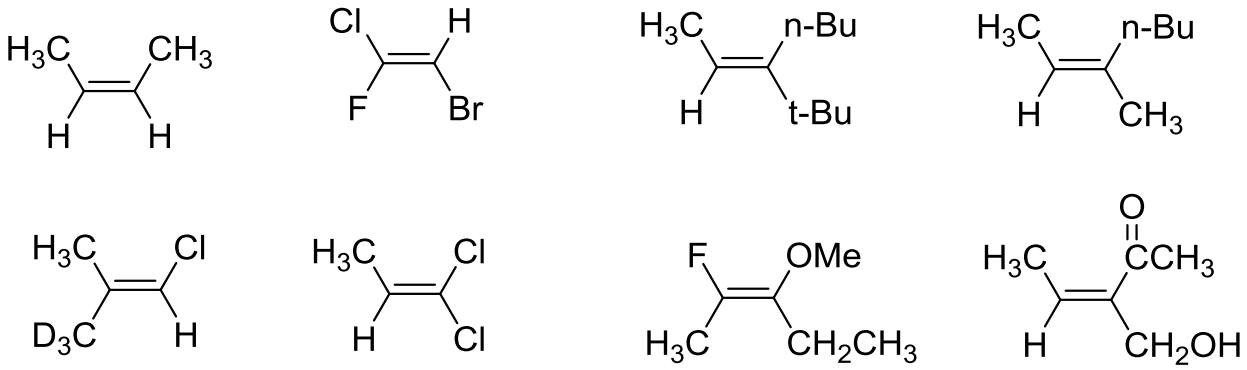
1) Classificare questi composti per ordine crescente di stabilità

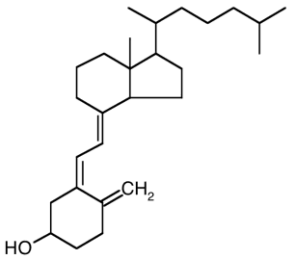


3) Scrivere le forme di risonanza di un catione allilico, di un radicale allilico, di un anione allilico e di un catione benzilico

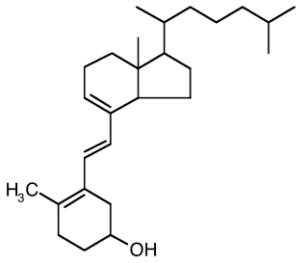
2) Assegnare la stereochimica dei seguenti composti con i descrittori E/Z e quando possibile con cis/trans (si può utilizzare la nomenclatura cis/trans quando la stereochimica viene definita in modo univoco prendendo come riferimento la catena prinsipale di atomi di carbonio).



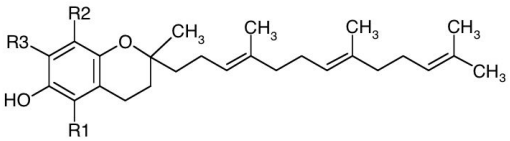
3) Individuare le funzioni olefiniche (doppi legami) non aromatici nelle seguenti molecole e indicarne la stereochimica.



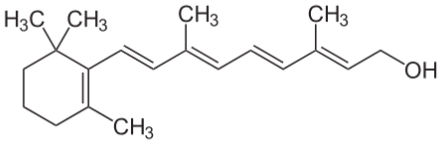
Vitamina D (colecalciferolo)



Vitamina D (tachisterolo)



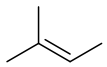
Vitamina E (tocotrienoli)

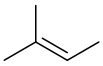


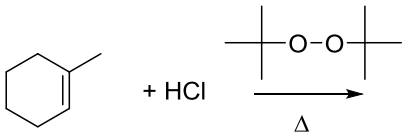
Vitamina A (retinolo)

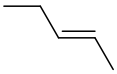
4. Ordinare in ordine decrescente d'abbondanza i prodotti derivati dalla reazione di monoclorurazione radicalica del 2(*S*)-fenil-butano e indicare le proporzioni relative degli stereoisomeri che si formano.

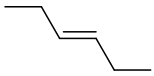
5. Disegnare il prodotto maggioritario delle seguenti reazioni indicando la stereochimica quando rilevante

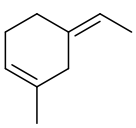


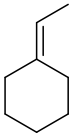


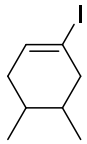


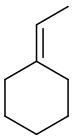












6) Proporre una via sintetica per preparare i seguenti composti a partire da bromocicloesano:
a) trans-1,2-dibromocicloesano
b) cicloesano

7) Proporre una via sintetica per effettuare la seguente trasformazione