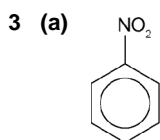


## Aromatic Molecules Answers

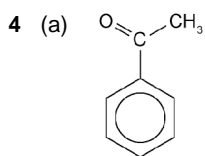
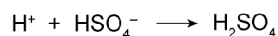
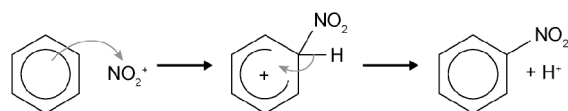
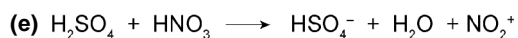
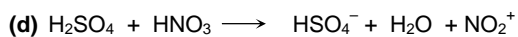
- 1 (a) benzene  
 (b) methylbenzene  
 (c) 1,3-dimethylbenzene  
 (d) nitrobenzene  
 (e) 2,4,6-trinitromethylbenzene  
 (f) phenylethanone  
 (g) phenylpropanone  
 (h) 1,3-diethylbenzene

- 2 A number of valid pieces of evidence may be chosen for this answer. Any three from the list below can be used.
- The bond lengths in benzene are identical and are intermediate between that of C–C single bonds and that of C=C double bonds.
  - Benzene is a symmetrical molecule.
  - Benzene is more stable than would be expected for the Kekulé structure.
  - Benzene undergoes substitution not addition reactions.

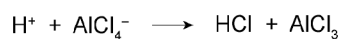
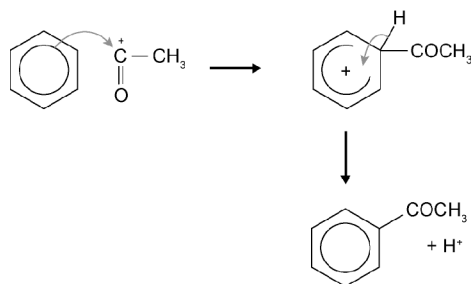
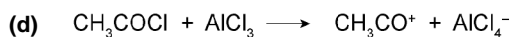
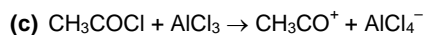


(b) the mixture of concentrated sulfuric and concentrated nitric acids

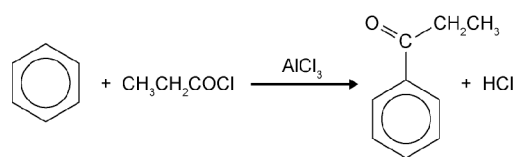
(c)  $\text{NO}_2^+$



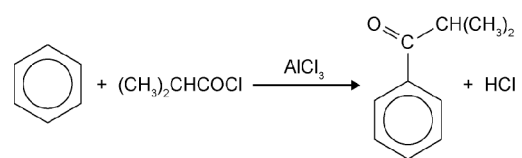
(b) aluminium chloride



5 (a)



(b)



(c)

