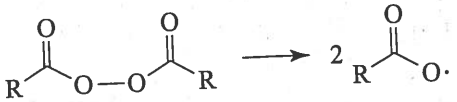
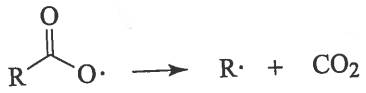
17.17 (a) The oxygen-oxygen bond of the diacyl peroxide has a low homolytic bond dissociation energy ($DH^\circ \sim 139$ kJ mol^{-1}). This allows the following reaction to occur at a moderate temperature.



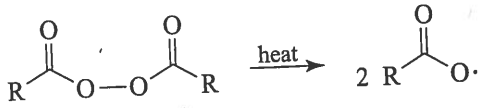
$\Delta H^\circ \simeq 139$ kJ mol^{-1}

(b) By decarboxylation of the carboxyl radical produced in part (a).

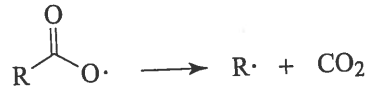


(c) ***Chain Initiation***

Step 1



Step 2

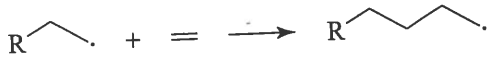


Chain Propagation

Step 3



Step 4

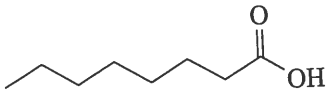


Steps 3, 4, 3, 4, and so on.

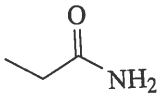
Problems

Structure and Nomenclature

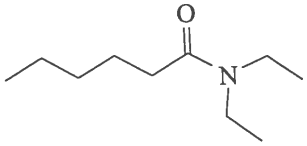
17.18 (a)



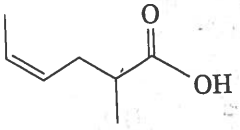
(b)



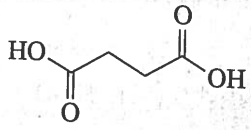
(c)

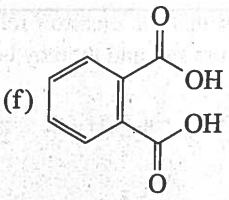


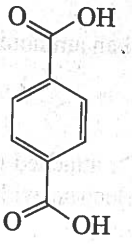
(d)

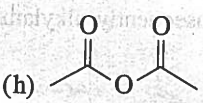


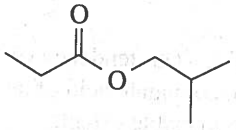
[the (Z) isomer]

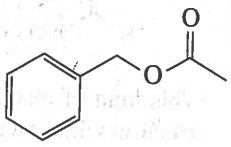
(e) 

(f) 

(g) 

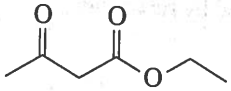
(h) 

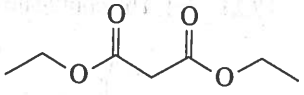
(i) 

(j) 

(k) 

(l) 

(m) 

(n) 

17.19 (a) Benzoic acid

(b) Benzoyl chloride

(c) Acetamide or ethanamide

(d) Acetic anhydride or ethanoic anhydride

(e) Benzyl benzoate

(f) Phenyl propanoate or phenyl propionate

(g) Isopropyl acetate or 1-methylethyl ethanoate

(h) Acetonitrile or ethanenitrile