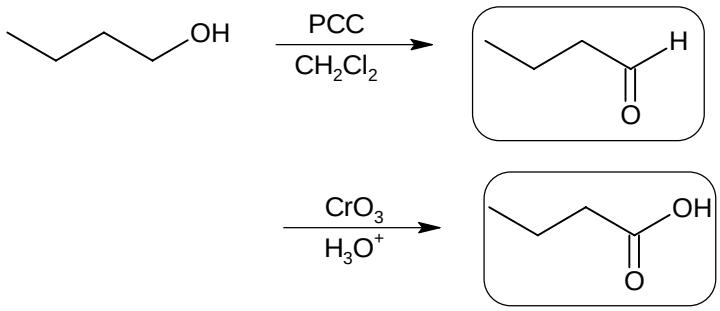
Sample Exam Solutions

Question 1: b, e, c, c, a, a, a, e, d, b, e, c

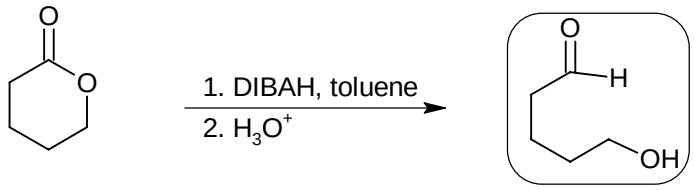
Question 2: (a) I, C, M, K
(b) A, N, G, Q

Question 3:

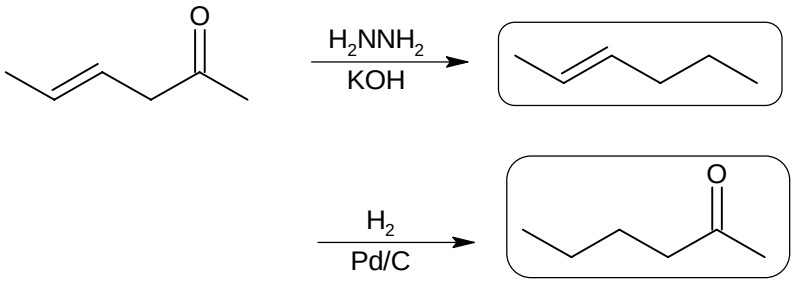
(a)



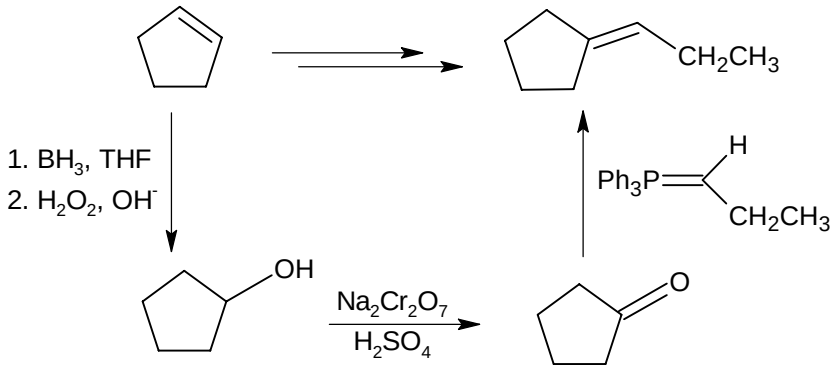
(b)



(c)

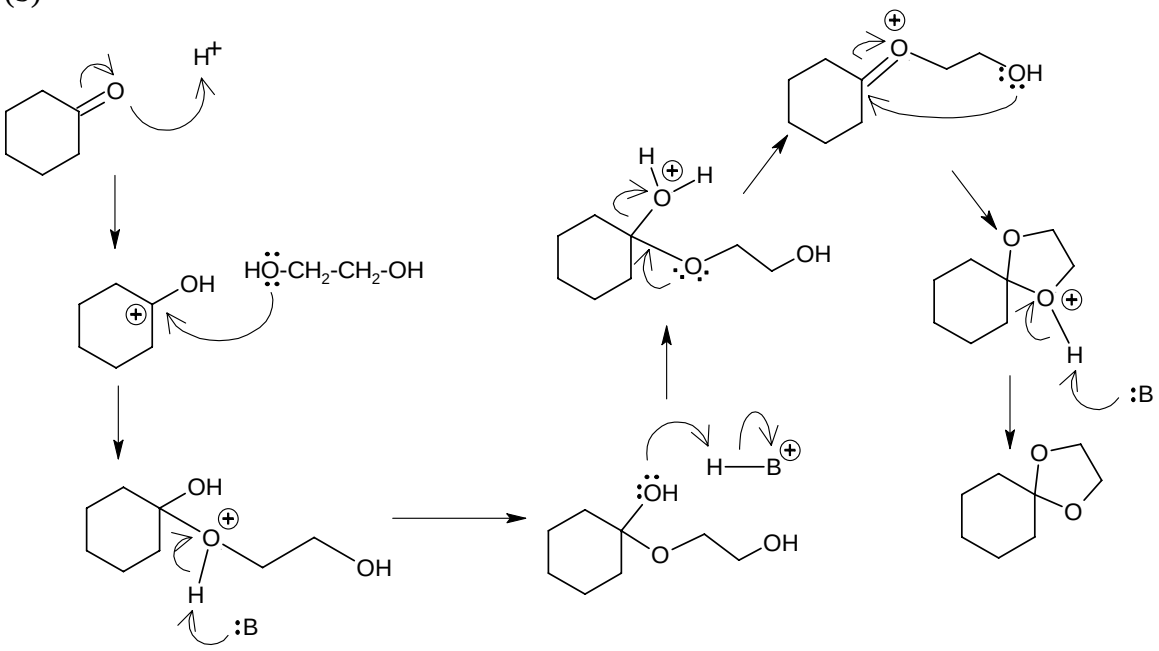


(d) Here is one possible route:

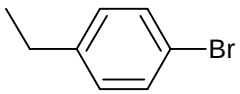


Question 4: (a) see p. 762, diagram after the sentence, “Elimination of triphenylphosphhine oxide forms the alkene product.”

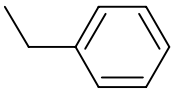
(b)



Question 5 The compound is *p*-bromoethylbenzene,



Question 6 (a) The compound is ethylbenzene,



(b) The compound is cyclohexenone because:

(i) there are peaks to the right (alkane C-H) and left (alkene C-H) of 3000 cm^{-1}

(ii) there is a carbonyl at 1720 cm^{-1}

(iii) there is no evidence of an alcohol (no broad peak around 3400 cm^{-1})

Therefore, it is an alkene and has a carbonyl, so the only acceptable choice of the compounds given is cyclohexenone.

(c) The compound is 3-phenylpropanal,

