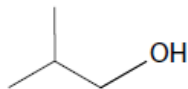


Unit 2 - activity

19 2-methylpropan-1-ol has the skeletal formula:



(a) 2-methylpropan-1-ol can be converted to 1-bromo-2-methylpropane.

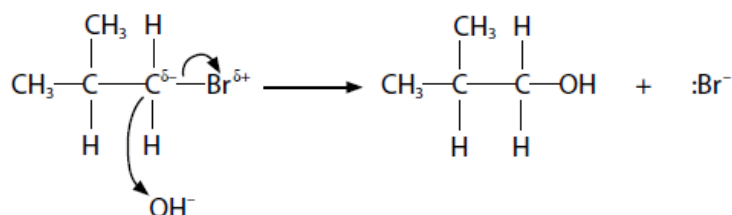
Give the reagents and conditions used for this reaction.

(2)

Reagents

Conditions

(b) 1-bromo-2-methylpropane can be converted back to 2-methylpropan-1-ol by heating with aqueous alkali. A student suggested the following mechanism for the reaction.



Identify and correct the three mistakes in the mechanism shown.

(3)

Question number	Answer	Additional guidance	Mark
19(a)	<ul style="list-style-type: none"> KBr/potassium bromide and (50%) sulfuric acid 	(1) Both needed for M1 Ignore acid concentration Allow HBr (dry) PBr ₃ /Phosphorus(III) bromide PBr ₅ /Phosphorus(V) bromide	2
	<ul style="list-style-type: none"> (heat under) reflux 	(1) Do not allow just heat M2 conditional on correct or near correct M1	
Question number	Answer	Additional guidance	Mark
19(b)	<ul style="list-style-type: none"> C-Br dipole reversed 	(1) Allow in any order	3
	<ul style="list-style-type: none"> OH⁻ to C arrow reversed 	(1)	
	<ul style="list-style-type: none"> lone pair missing (from OH⁻) 	(1)	