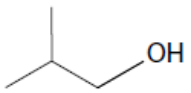
Unit 2 - activity

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



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

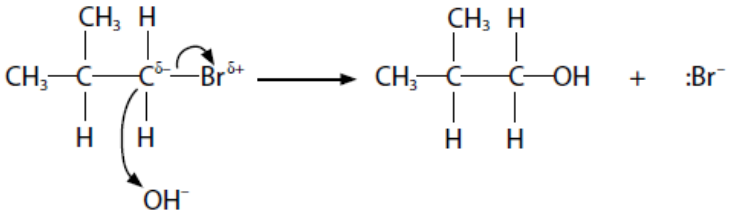
Give the reagents and conditions used for this reaction.

(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)	• 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
	• (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)	• C-Br dipole reversed	(1)	Allow in any order	3
	• OH^- to C arrow reversed	(1)		
	• lone pair missing (from OH^-)	(1)		