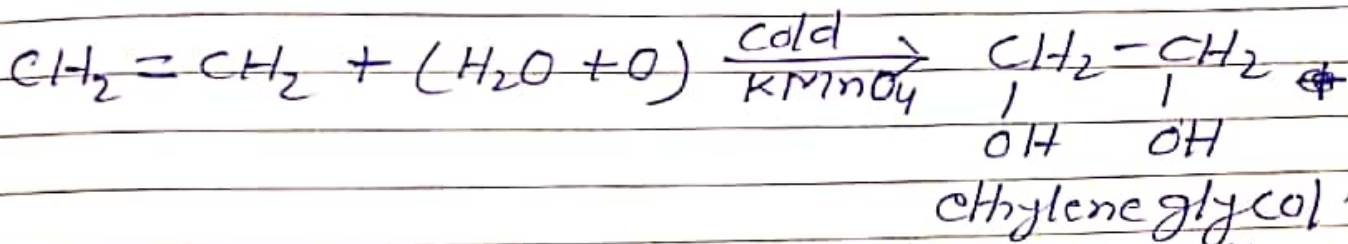


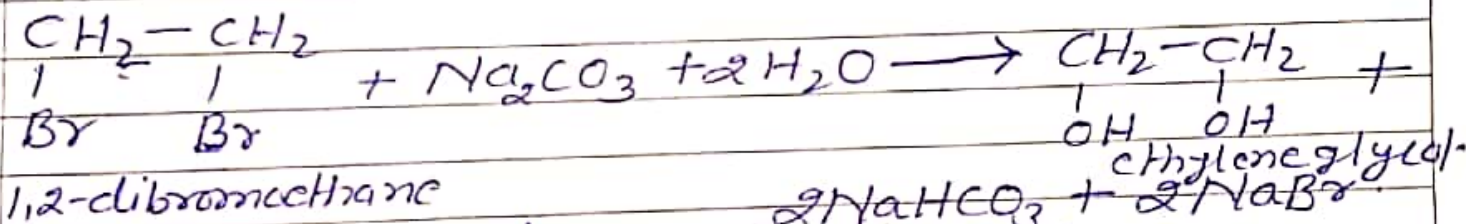
Preparation of Glycol :-

It is prepared by following method.

(1) By oxidation of ethylene with cold dilute potassium permanganate solution.



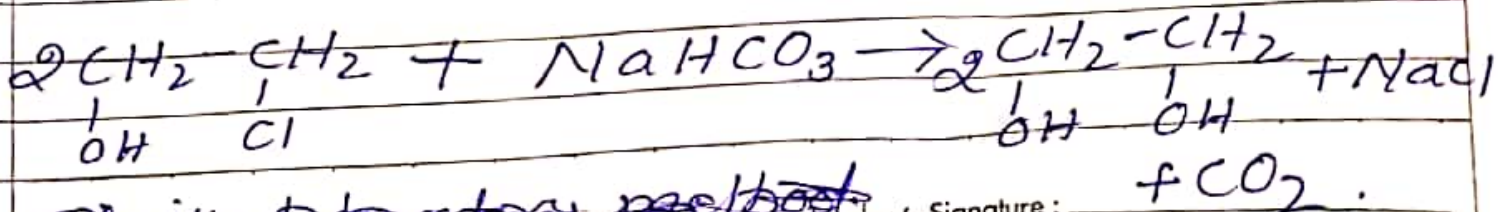
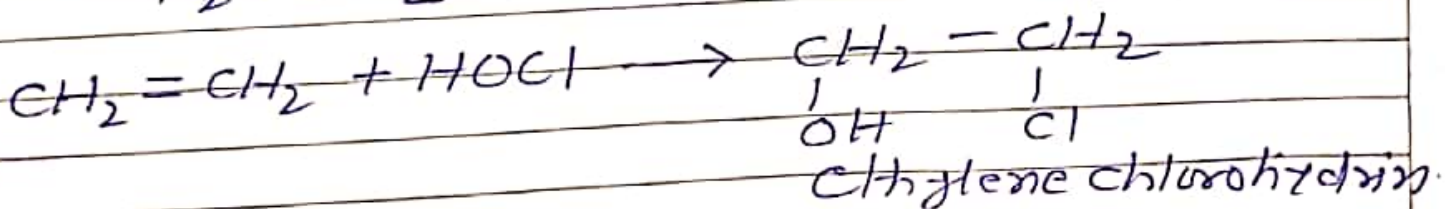
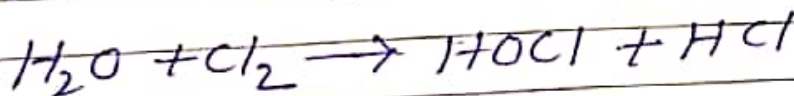
(2) By the hydrolysis of 1,2-dibromomethane with aqueous sodium carbonate solution.



It is laboratory method.

(3) By hydrolysis of ethylene chlorohydrin with sodium bicarbonate.

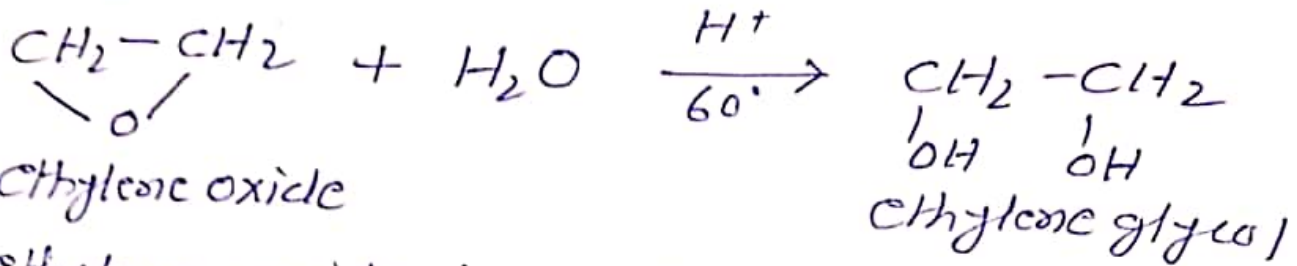
Ethylene chlorohydrin is prepared by passing ethylene into aqueous hypochlorous acid.



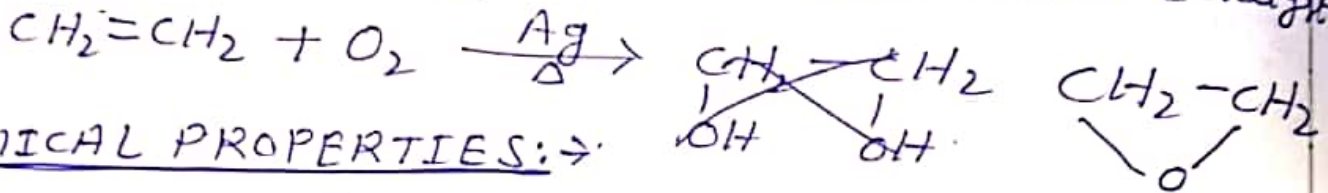
~~It is laboratory method~~

Teacher's Signature: \_\_\_\_\_

④ By the action of ethylene oxide with  $H_2O$  at  $200^\circ C$  under pressure or with dilute  $H_2SO_4$  at  $60^\circ C$ . It is commercial method



ethylene oxide is made by passing a mixture of ethylene and oxygen over heated silver catalyst



CHEMICAL PROPERTIES: →

Ethylene glycol molecule contains two -OH groups its chemical reactions are, therefore, those of primary alcohols twice over. Generally, one -OH group is attacked completely before the other reacts. More vigorous conditions are sometimes needed for reaction of the second of the two -OH group.

① Reaction with Phosphorous trihalide: →

Ethylene glycol reacts with  $PCl_3$  or  $PBr_3$  and formed corresponding halide.

