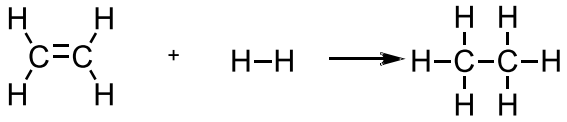
ADDITION REACTIONS – TEST 1

QUESTION 1
The product of the addition of bromine to ethene is?

A 1,1-dibromoethane
B 1,2-dibromoethane
C 1,1-dibromoethene
D 1,2-dibromoethene

QUESTION 2



The above reaction is an example of

i. Addition
ii. Hydrogenation
iii. Reduction
iv. Substitution

A i
B i and ii
C i, ii and iii
D all of the above

QUESTION 3
Which of the following reactions does not require a catalyst?

A $CH_2CH_2 + Cl_2$
B $CH_2CH_2 + H_2$
C $CH_2CH_2 + H_2O$
D $CH_2CH_2 + HCl$

QUESTION 3
When chlorine is reacted with propene, how many products are possible?

A 1
B 2
C 3
D 4

QUESTION 4
2-chlorobutane can be made from the reaction of

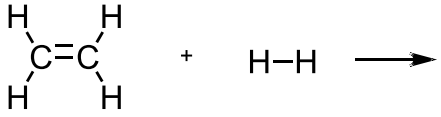
A 1-butene and chlorine
B 1-butene and HCl
C 2-butene and chlorine
D All of the above

QUESTION 5
Some addition reactions can result in a number of products. What is the smallest alkene that will result in two or more products when reacted with HCl?

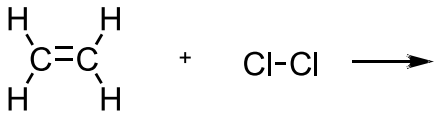
A ethene
B propene
C butene
D pentene

QUESTION 6
Complete the following equations.

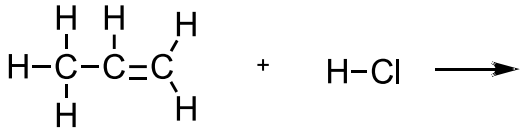
A



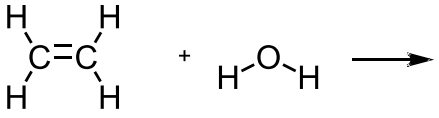
B



C

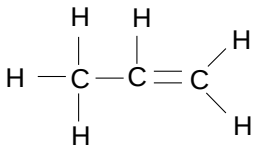


D



QUESTION 7
Reacting a substance with iodine tests for the presence of unsaturated hydrocarbon chains in various substances such as oils. The amount of iodine reacted is used as a measure for the degree of unsaturation for the hydrocarbons present.

A typical substance capable of undergoing such a reaction with iodine is shown below:



(a) Write an equation for the reaction of the above substance with iodine (I_2).

(b) Name the type of reaction represented by the equation.

(c) Name the product of the reaction.

QUESTION 3
Explain how the degree of saturation can be determined by reacting an unsaturated molecule with hydrogen.

Solution

ANSWERS

QUESTION 1 Answer is B

QUESTION 2 Answer is C

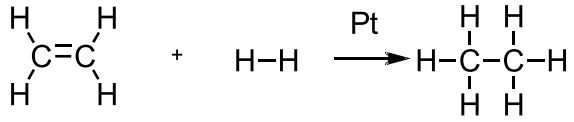
QUESTION 3 Answer is A

QUESTION 4 Answer is B

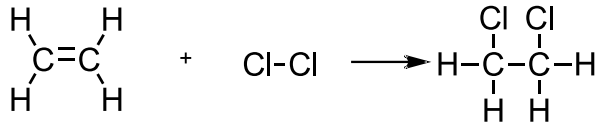
QUESTION 5 Answer is B

QUESTION 6

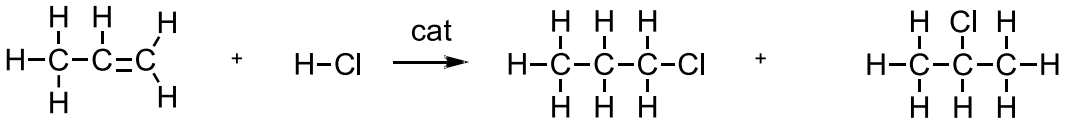
(a)



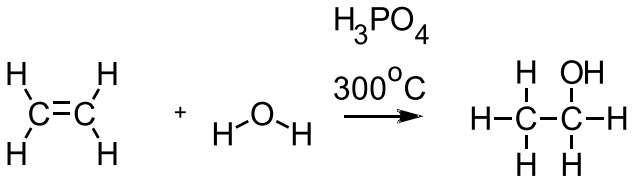
(b)



(c)

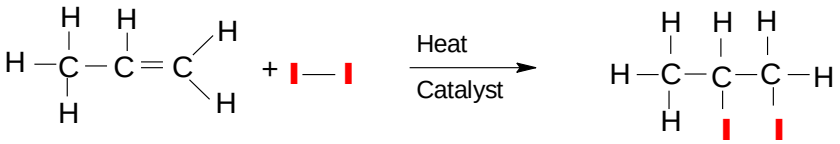


(d)



QUESTION 7

(a) $CH_3CHCH_2(g) + I_2 \rightarrow CH_3CHICH_2I(g)$ In the presence of a catalyst and high temperature.



(b) Addition reaction
(c) 1,2-diiodopropane

QUESTION 8

One hydrogen molecule will react for each double bond in a molecule. Therefore, the degree of unsaturation can be determined by comparing the mole of reactant with the mole of hydrogen that reacted with it. If the ratio is 1:1, then there was one double bond in the molecule. If the ratio was 1:2, then there were two double bonds in the molecule and so forth.