CHEMISTRY ONLINE
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CHEMISTRY

ORGANIC CHEMISTRY II

Level & Board	AQA (A-LEVEL)
TOPIC:	CARBOXYLIC ACIDS
PAPER TYPE:	SOLUTION - 1
TOTAL QUESTIONS	10
TOTAL MARKS	57

Carboxylic Acids and Derivatives - 1

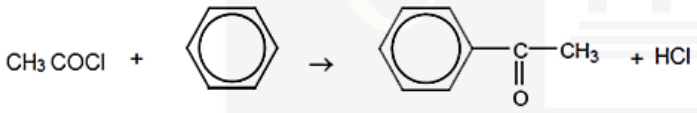
1.

The acyl chloride CH_3COCl reacts with benzene.

Equation:

$CH_3COCl + C_6H_6 \rightarrow C_6H_5COCH_3 + HCl$

Or



Name of the organic product:

Phenylethanone

Catalyst for the reaction:

$AlCl_3$

The overall reaction showing the catalyst involvement can be summarized as:

$AlCl_3 + CH_3COCl \rightarrow AlCl_4^- + CH_3CO^+$

(4)

2. C

(1)

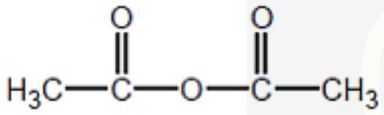
I am Sorry !!!!!

3.

A nucleophile is a species that donates a pair of electrons to an electron-deficient center (usually a carbon atom) to form a new covalent bond.

Nucleophiles are typically rich in electrons and can be negatively charged ions or neutral molecules with lone pairs of electrons.

Following is the organic product formed by the reaction of CH_3COO^- with CH_3COCl:



Functional group produced in this reaction:

(Acid) anhydride

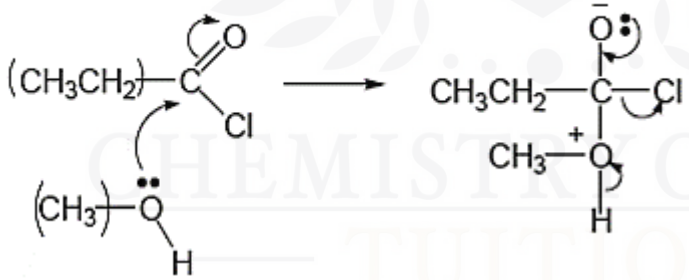
(3)

4. **C**

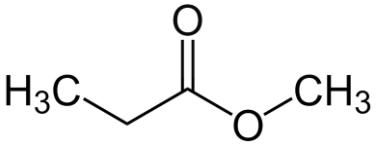
(1)

5.

Mechanism:



Product:



Organic product formed:

Methyl propanoate

(5)

6. D

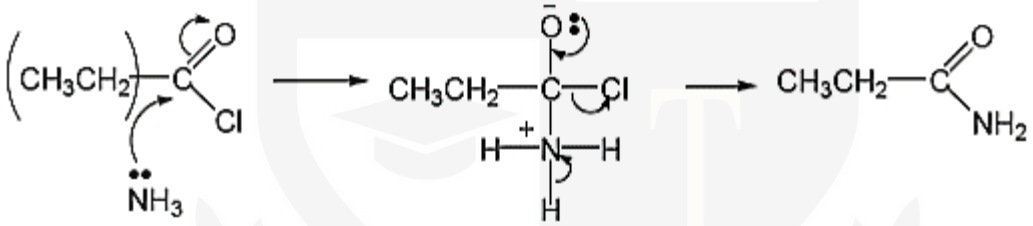
(1)

7.

Name of the mechanism:

(Nucleophilic) addition-elimination

Mechanism:



Name of the organic product:

Propanamide

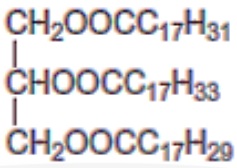
(5)

8. B

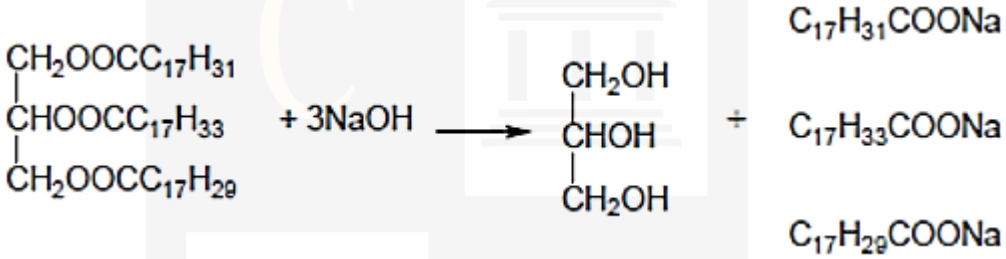
(1)

9.

(a)



Following is an equation for the reaction of ester with sodium hydroxide to form soap:



(2)

(b)

Following is the formula of the biodiesel molecule with the highest Mr that can be produced by reaction of ester with methanol:

$C_{17}H_{33}COOCH_3$

$(C_{19}H_{36}O_2)$

(1)

10. D

(1)

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