



CHEMISTRY ONLINE
— **TUITION** —

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CHEMISTRY

ORGANIC CHEMISTRY II

Level & Board

AQA (A-LEVEL)

TOPIC:

ORGANIC SYNTHESIS

PAPER TYPE:

SOLUTION - 2

TOTAL QUESTIONS

10

TOTAL MARKS

/23

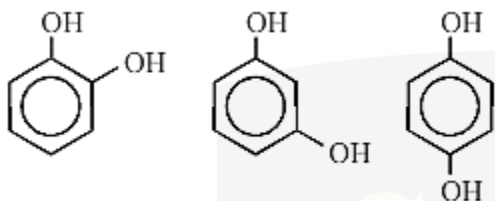
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Organic Synthesis - 2

1.

(a)

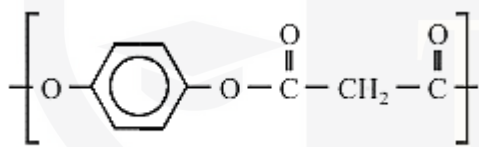
Isomers of $C_6H_4(OH)_2$



(2)

(b)

Structure of a polymer formed by $ClCOCH_2COCl$:



(2)

2. c

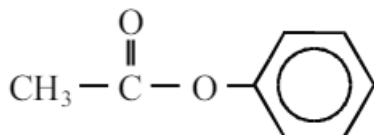
(1)

3.

Type of reaction:

Esterification / condensation

Structure of the organic product:



(2)

4. B

(1)

5.

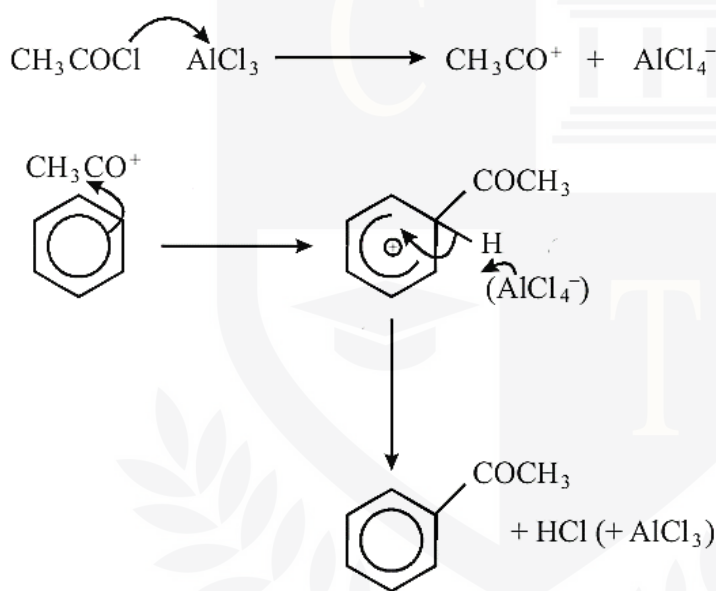
(a)

Aluminium chloride or AlCl_3 or iron(III) chloride or FeCl_3 must be present for this reaction to occur which act as catalyst this reaction.

(2)

(b)

Mechanism:



(4)

6. B

(1)

7.

The difference in reactivity between the carbonyl group (C=O) and the alkene group (C=C) can be explained as follows:

The C=O group is polar and the nucleophile attacks the δ^+ carbon, whereas C=C is non-polar and electron-rich, so the double bond/ π -bond is attacked by electrophiles.

(2)

8. D

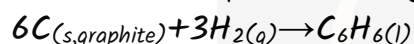
(1)

9.

(a)

The standard enthalpy of formation of benzene, C_6H_6 is the heat energy change released when 1 mole of benzene is formed from its elements under standard conditions.

This can be represented by the following balanced chemical equation:



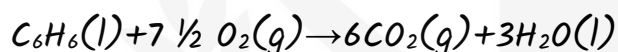
The standard conditions are defined as 298 K (25°C) and 1 atm pressure.

(2)

(b)

The standard enthalpy of combustion of benzene, $C_6H_6(l)$, is the heat energy change when 1 mole of benzene burns in excess oxygen to form carbon dioxide and water under standard conditions.

This can be represented by the following balanced chemical equation:



The standard conditions are defined as 298 K (25°C) and 1 atm pressure.

(2)

10. B

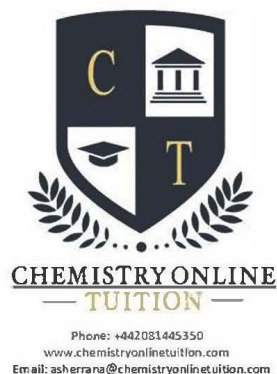
(1)

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I am Sorry !!!!!



DR. ASHAR RANA



- Founder & CEO of Chemistry Online Tuition Ltd.
- Tutoring students in UK and worldwide since 2008
- Chemistry, Physics, and Math's Tutor

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