

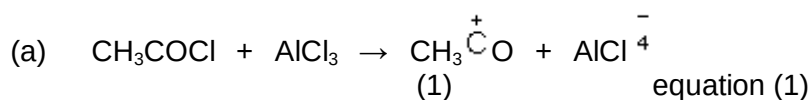
Name of the Student: _____

Max. Marks : 22 Marks

Time : 22 Minutes

Mark Schemes

Q1.



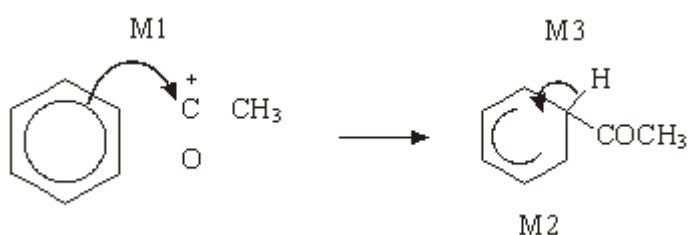
2

penalise wrong alkyl group once at first error
 position of + on electrophile can be on O or C or outside []
 penalise wrong curly arrow in the equation or lone pair on AlCl_3 else ignore

Electrophilic substitution

NOT F/C acylation

1



horseshoe must not extend beyond C2 to C6 but can be smaller

+ not too close to C1

M3 arrow into hexagon unless Kekule

allow M3 arrow independent of M2 structure

M1 arrow from within hexagon to C or to + on C

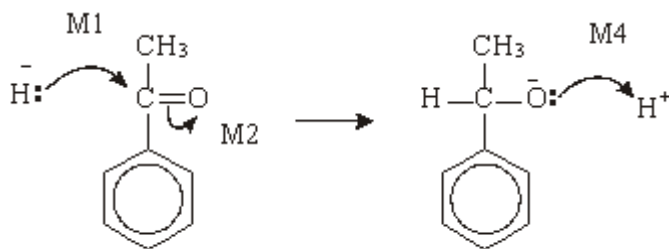
+ must be on C of RCO^+

3

(b) Nucleophilic addition

NOT reduction

1



M2 not allowed independent, but can allow M1 for attack of H^- on C^+ formed

4

1-phenylethan(-1-)-ol or (1-hydroxyethyl)benzene

1

(c) dehydration or elimination

1

(conc) H_2SO_4 or (conc) H_3PO_4

allow dilute and Al_2O_3

Do not allow iron oxides

1

[14]

Q2.

- (a) $\text{CH}_3\text{CH}_2\text{COCl}$ OR $\text{CH}_3\text{CH}_2\text{CClO}$ OR propanoyl chloride
OR $(\text{CH}_3\text{CH}_2\text{CO})_2\text{O}$ OR propanoic anhydride
penalise contradiction in formula and name e.g. propyl chloride
could score in equation

1

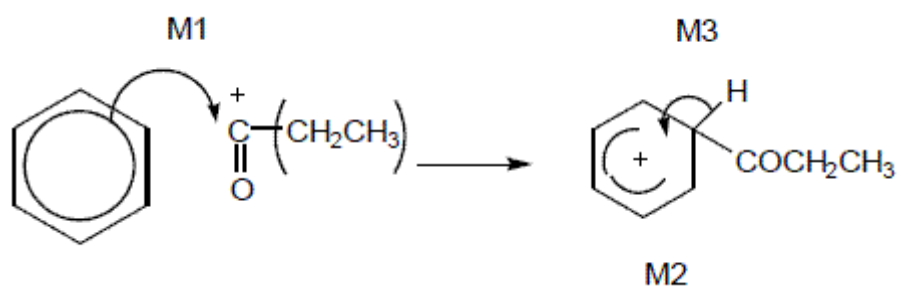
AlCl_3 or FeCl_3 or names
could score in equation

1

$\text{CH}_3\text{CH}_2\text{COCl} + \text{AlCl}_3 \rightarrow \text{CH}_3\text{CH}_2\text{CO}^+ + \text{AlCl}_4^-$
Allow RCOCl in equation but penalise above
allow + on C or O in equation

1

(b)

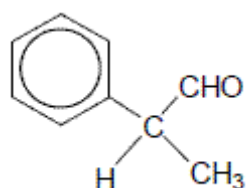


M1 arrow from circle or within it to C or to + on C
Horseshoe must not extend beyond C2 to C6 but can be smaller + not too close to C1
M3 arrow into hexagon unless Kekule
allow M3 arrow independent of M2 structure
Ignore base removing H in M3

3

- (c) Tollens or ammoniacal silver nitrate

1



penalise wrong formula

1

[8]