

Name of the Student: _____

Max. Marks : 18 Marks

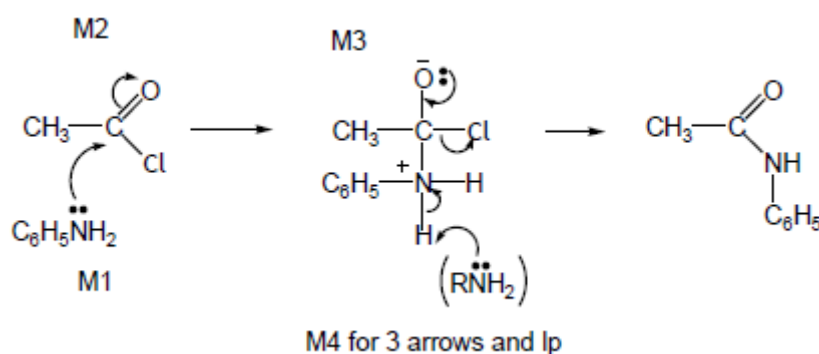
Time : 18 Minutes

Mark Schemes

Q1.

- (a) (nucleophilic) addition-elimination
Not electrophilic addition-elimination

1

*Allow C₆H₅ or benzene ring**Allow attack by :NH₂C₆H₅**M2 not allowed independent of M1, but allow M1 for correct attack on C⁺**M3 for correct structure with charges but lone pair on O is part of M4**M4 (for three arrows and lone pair) can be shown in more than one structure*

4

- (b) **The minimum quantity of hot water was used:**

To ensure the hot solution would be saturated / crystals would form on cooling

1

The flask was left to cool before crystals were filtered off:

Yield lower if warm / solubility higher if warm

1

The crystals were compressed in the funnel:

Air passes through the sample not just round it

Allow better drying but not water squeezed out

1

A little cold water was poured through the crystals:

To wash away soluble impurities

(c) Water

Do not allow unreacted reagents

1

Press the sample of crystals between filter papers

Allow give the sample time to dry in air

1

(d) M_r product = 135.0

1

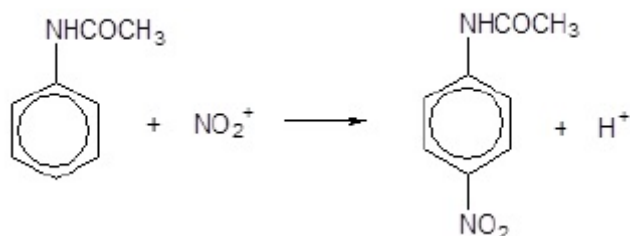
$$\text{Expected mass} = 5.05 \times \frac{135.0}{93.0} = 7.33 \text{ g}$$

1

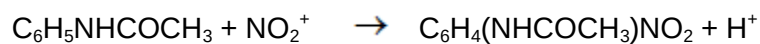
$$\text{Percentage yield} = \frac{4.82}{7.33} \times 100 = 65.75 = 65.8(\%)$$

Answer must be given to this precision

(e)



OR



1

(f) Electrophilic substitution

1

(g) Hydrolysis

1

(h) Sn / HCl

Ignore acid concentration; allow Fe / HCl

1

[18]