

Name of the Student: _____

Max. Marks : 25 Marks

Time : 25 Minutes

Mark Schemes

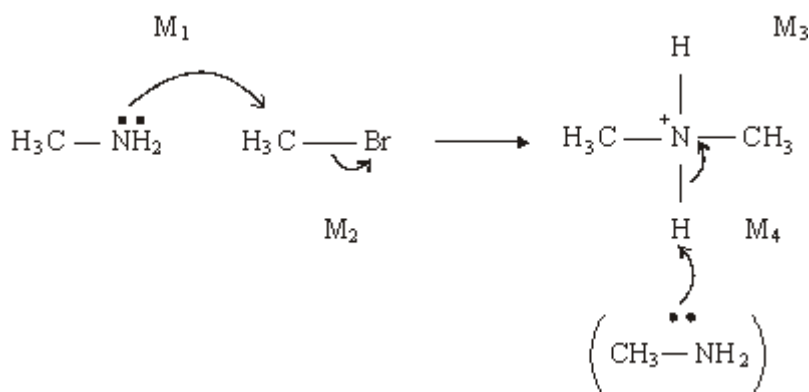
Q1.

(a) dimethylamine

1

(b) nucleophilic substitution

1



4

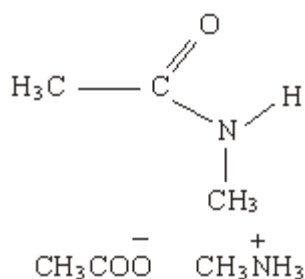
(c) quaternary ammonium salt

1

(cationic) surfactant / bactericide / detergent / fabric softener or conditioner/hair conditioner

1

(d)

(allow CH_3COOH or $\text{CH}_3\text{COO}^- \text{NH}_4^+$)

2

[10]

Q2.

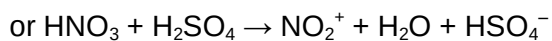
- (a) (i) conc HNO_3

1

conc H_2SO_4

allow 1 for both acids if either conc missing

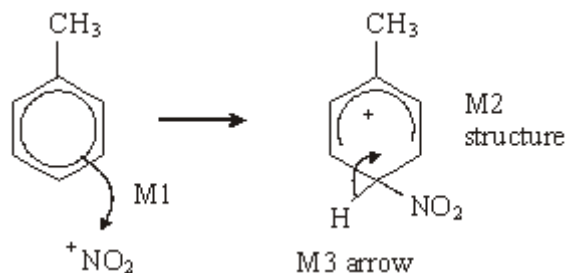
1



1

- (iii) electrophilic substitution CH_3

1



horseshoe must not extend beyond C2 to C6 but can be smaller
+ must not be too close to Cl

3

- (b) Sn or Fe / HCl (conc or dil or neither)
or Ni / H_2 not NaBH_4 LiAlH_4

1

- (c) (i) NH_3

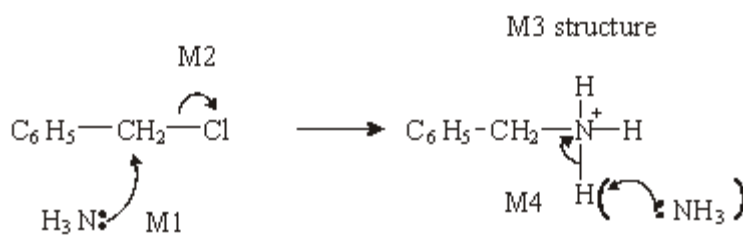
1

Use an excess of ammonia

1

- (ii) nucleophilic substitution

1



4

[15]