Practice Question Set For A-Level
Subject : Chemistry
Paper-2 Topic: Aldehydes & ketones

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Exam Preparation and Free Resources

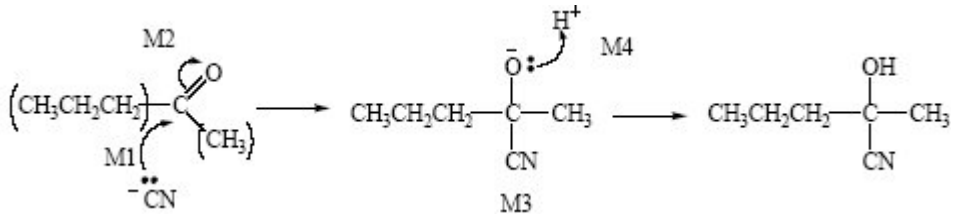
Name of the Student:_____
Max. Marks :20 Marks **Time :20 Minutes**

Mark Schemes

Q1.

(a) nucleophilic addition

1



Attack by HCN loses M1 and M2
M2 not allowed independent of M1, but
allow M1 for correct attack on C+
+C=O loses M2
M2 only allowed if correct carbon attacked
allow minus charge on N i.e. :CN⁻

4

M3 for completely correct structure not including lp
allow C_3H_7 in M3

M4 for lp and arrow
allow without –

1

2-hydroxy-2-methylpentan(e)nitrile
allow 2-hydroxy-2-methylpentanonitrile

(b) Product from **Q** is a racemic mixture/equal amounts of enantiomers
if no reference to products then no marks;

1

racemic mixture is inactive or inactive explained
*not **Q** is optically active or has a chiral centre etc*

1

Product from **R** is inactive (molecule) or has no chiral centre

1

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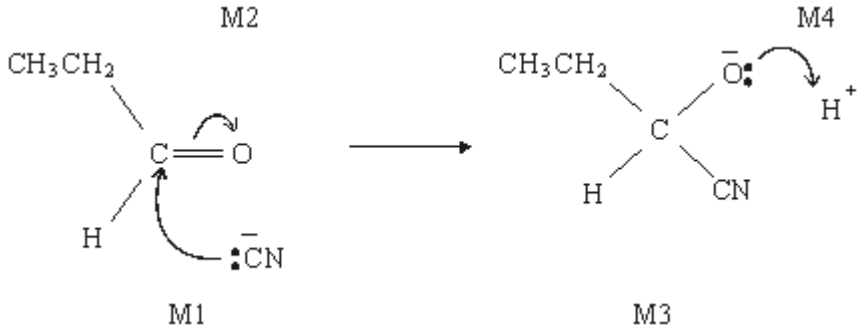
Q2.

(a) nucleophilic addition

1

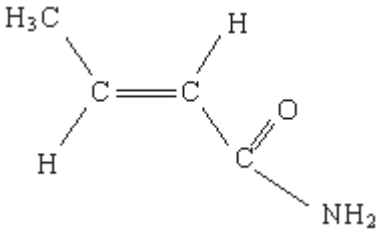


4

(b) (i) 2-hydroxybutanenitrile

1

(ii)

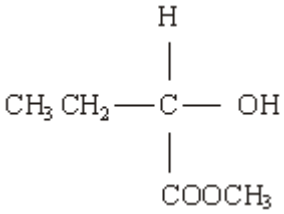


(allow 1 for amide even if not C_4H_7NO, i.e. $RCONH_2$)

(if not amide, allow one for any isomer of C_4H_7NO which shows geometric isomerism)

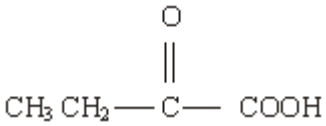
2

(c) (i)



1

(ii)



1

(iii) $CH_3CH=CHCOOH$

1

[11]

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