

Practice Question Set For A-Level

Subject : Chemistry

Paper-2 Topic: Polymers

Name of the Student: _____

Max. Marks : 21 Marks

Time : 21 Minutes

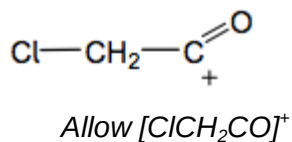
Mark Schemes

Q1.
C

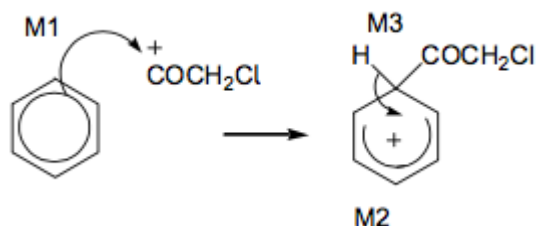
[1]

Q2.

(a) (i)



1



(ii)

M1 for arrow from inside hexagon to C or + on C on correct electrophile

M2 for structure of intermediate

- Horseshoe centred on C1;
- + in intermediate not too close to C1 (allow on or "below" a line from C2 to C6)

M3 for Arrow from bond to H into ring

- Allow M3 arrow independent of M2 structure
- + on H in intermediate loses M2 not M3
- Ignore Cl- removing H^+

1

1

1

(b) Reagent

Water

(Aqueous) silver nitrate

NaOH followed by acidified silver nitrate

(Water +) named indicator

Named alcohol

Na_2CO_3 or NaHCO_3

Ammonia

1

P

No reaction

No reaction (or slow formation of ppt)

No reaction (or slow formation of ppt)

No colour change

NVC

NVC

No reaction

Do NOT award

No observation

1

Q

Steamy /misty/ white fumes

White precipitate (immediately formed)

White precipitate (immediately formed)

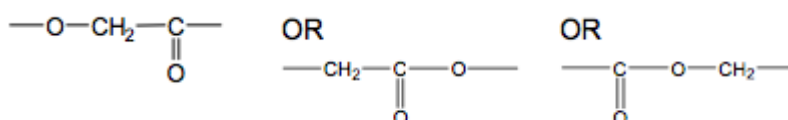
Indicator turns to correct acid colour

Fruity or sweet smell or misty fumes

Fizzing or effervescence (not just gas produced)

White smoke

1



(c) (i)

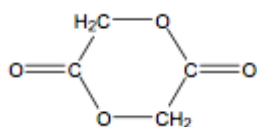
One unit only

Must have trailing bonds

Ignore n and brackets

allow $\text{---O---CH}_2\text{---CO---}$

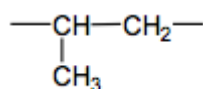
1



(i)

Allow CO for C=O

1



(d) (i)

One unit only

Must have trailing bonds

Ignore n and brackets

1

(ii) PGA sutures react/dissolve/break down/are biodegradable/ are hydrolysed / attacked by water or nucleophiles /no need to remove

OR Polypropene not biodegradeable/ not hydrolysed / not attacked by water/nucleophiles

1

(Ester links have) polar bonds

polypropene contains non-polar bonds

ignore intermolecular forces

1

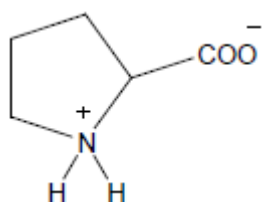
[12]

Q3.
D

[1]

Q4.

(a) (i)



Allow CO_2^- and NH_2^+

1

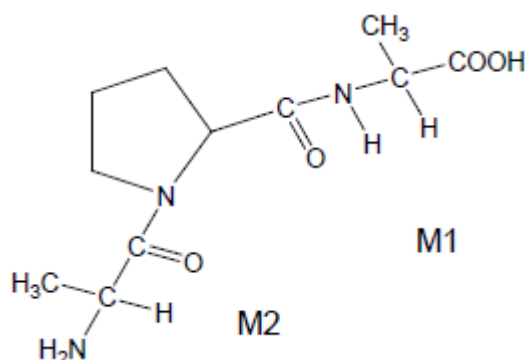
(ii) NOTE – **Two** marks for this clip

M1 for alanine section bonded through N

M2 for alanine section bonded through C

But penalise error in proline ring

1



Allow MAX 1 for correct tripeptide in polymer structure

1

(b) (i) 3-methylpent-2-ene

Ignore E-Z, commas, spaces or missing hyphens

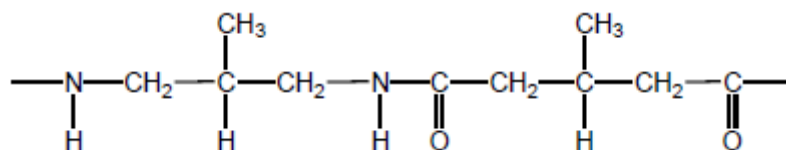
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(ii) 4-amino-3-methylbutanoic acid

Ignore commas, spaces or missing hyphens

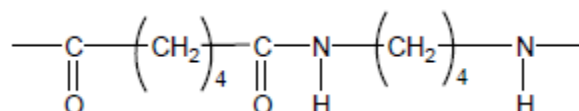
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(iii)



or any polyamide section containing

8 carbons plus two $\text{C}=\text{O}$ plus two $\text{N}-\text{H}$, such as



Trailing bonds are required

1

(iv) Non polar OR no polar groups / bonds (for attack by water / acids / alkalis / nucleophiles or for hydrolysis)

