

Name of the Student: \_\_\_\_\_

Max. Marks : 20 Marks

Time : 20 Minutes

Mark Schemes

Q1.

- (a) polyamide or nylon (2,4)

*(allow nylon without numbers but if numbers are present they must be correct)*

1

condensation

1

- (b)  $\text{H}_3\text{N}^+ - \text{CH}_2 - \text{COO}^-$

1

- (c) ionic bonding in aminoethanoic acid

*(can only score if includes that aminoethanoic is ionic)*

1

stronger attractions than Hydrogen bonding in hydroxyethanoic acid

*(e.g. stronger Hydrogen bonding in aminoethanoic acid scores 0)*

*(mention of electrostatic forces between molecules scores 0)*

1

[5]

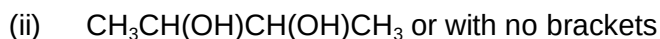
Q2.



1

Addition or radical (**QoL**)

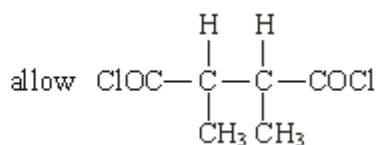
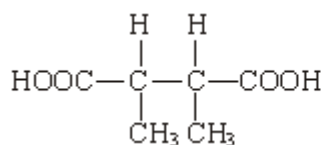
1



1

butan(e)-2,3-diol or 2,3-butan(e)diol

1



1

2,3-dimethylbutan(e)dioic acid

2,3-dimethylbutan(e)dioyl chloride

ignore -1,4-

1

condensation (**QoL**)

1

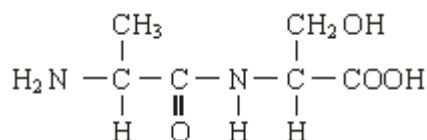


*Allow conc sulphuric/nitric*

**NOT** water nor acidified water nor weak acids

1

(b) Structure 1



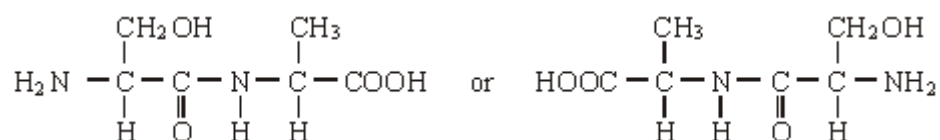
*Allow -CONH- and -COHN-*

*Allow zwitterions*

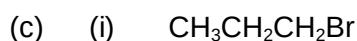
**NOT polypeptides/repeating units**

1

Structure 2 either of

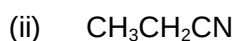


1



*allow -Cl, -I*

1



1



*if reduction written here, no further marks*

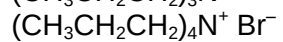
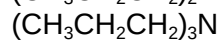
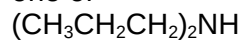
1

further substitution/reaction occurs or other products are formed

*Allow reduction forms only one product*

1

one of



*Allow salts including  $\text{NH}_4\text{Br}$*

*Allow  $\text{HBr}$*

1

[15]