Practice Question Set For A-Level
Subject : Chemistry
Paper-2 Topic: Optical isomerism

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Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Mark Schemes

Q1.

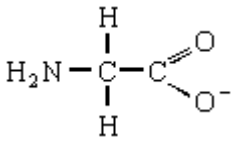
(a) 2-amino(e) propanoic acid **(1)**

1

(b) (i) molecules with same structure / structural formula **(1)**
but with bonds **(atoms or groups)** arranged differently in space (3D) **(1)**

(ii) Plane polarised light **(1)**
Rotated (equally) in opposite directions **(1)**

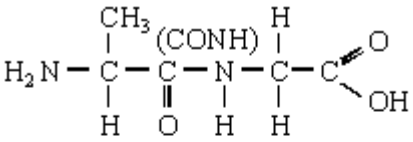
4

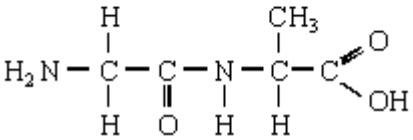
(c)  **(1)**

allow $H_2NCH_2COO^-$

Penalise NH_2- and OH- once per paper
but CH_3– is allowed

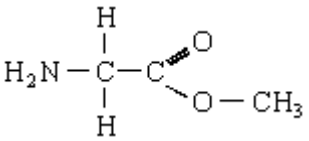
1

 **(1)**

(d)  **(1)**

Not anhydrides; not repeating units

2

(e)  **(1)**

or $H_2NCH_2COOCH_3$

1

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Q2.

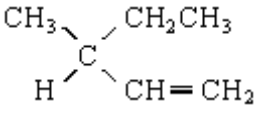
D

[1]

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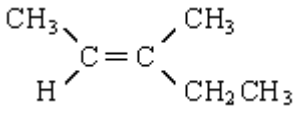
Q3.

(a) *Structure of* **P**:

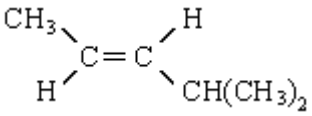


(1)

Structures of **Q** and **R**:



and



NOT C_3H_7

(1) **(1)**

Q and R in any order

3

(b) (i) *Racemic mixture*: <u>equal</u> mixture of optical isomers / enantiomers

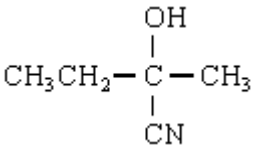
OR in explanation

Explanation: planar (>C=O) **(1)**

attack from either side is equally likely **(1)**

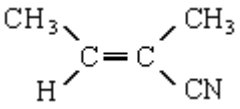
(ii) *Reagent **S***: HCN or (KCN / HCl **or** H_2SO_4) **(1)**

*Compound **T***:



(1)

*Compound **U***:



(1)

6

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