Answers for practice questions for Chapter 7 Organic chemistry: the basics

Question 1

a **i** amine; carboxylic acid A = **both correct**

ii 2-aminoethanoic acid A **(2 is not required)**

b Glycine does not have optical isomers because it does not have a carbon atom with 4 different groups attached (a chiral C or asymmetric C). A

Question 2

a $CH_3—CH_2—C(=O)—O—CH_3 + HCl$

methylpropanoate

condensation / esterification reaction

b $CH_3—CH_2—C(=O)—N(H)—CH_3 + HCl$

methylpropanamide

condensation reaction

c $CH_3—C(=O)—O^- Na^+ + CH_3—CH_3—OH$

sodium ethanoate ethanol

hydrolysis reaction

d $CH_3—CH_2—CHBr—CH_2Br$

1, 2 dibromobutane

addition reaction

e $(CH_3—CH_2—NH_3)^+_2\ SO_4^{2-}$ OR $(CH_3—CH_2—NH_3)_2SO_4$

ethylammonium sulfate

neutralisation / salt formation / acid-base reaction

A = 3 organic products plus 3 correct organic names or 3 correct reaction types, M = 3 organic products plus 3 correct organic names plus 3 correct reaction types, E = 3 complete equations including the inorganic products (where relevant) organic names and reaction types

Question 3

a B and C or B and D (Not C and D: they are geometric isomers, not structural isomers) A

b C and D A

c A A

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