AMINO ACIDS AND PH – TOPIC TEST 1

QUESTION 1
The most likely structure of glycine in a low pH solution would be:

A. $NH_3^+CH_2COO^-$
B. $NH_2CH_2COO^-$
C. $NH_3^+CH_2COOH$
D. NH_2CH_2COOH

QUESTION 2
For serine, which exists as a zwitterion at pH 6, the correct formula at a pH of 6 would be:

A. $H_2NCH(C_2H_5)COOH$
B. $H_3NCH(C_2H_5)COOH$
C. $H_2NCH(C_2H_5)COO^-$
D. $H_3N^+CH(C_2H_5)COO^-$

QUESTION 3
At low pH, amino acids

A accept H^+ to reform the carboxyl group
B accept H^+ at the amino functional group
C donate H^+ from the carboxyl group
D donate H^+ from the amino group

QUESTION 4
In acidic conditions, amino acids will

A migrate towards the negative electrode during electrophoresis
B migrate towards the positive electrode during electrophoresis
C not migrate during electrophoresis
D exist in the zwitterion form

QUESTION 5
When an amino acid is in basic conditions,

A the carboxyl group will exist as $COOH$ and the amino group will exist as NH_4^+
B the carboxyl group will exist as COO^- and the amino group will exist as NH_2
C the carboxyl group will exist as $COOH$ and the amino group will exist as NH_2
D the carboxyl group will exist as COO^- and the amino group will exist as NH_4^+

QUESTION 6
The charge on a glutamic acid molecule in alkaline conditions would be
A 0
B -1
C -2
D -3

SOLUTIONS

QUESTION 1 Answer is C

QUESTION 2 Answer is D

QUESTION 3 Answer is A

QUESTION 4 Answer is A

QUESTION 5 Answer is B

QUESTION 6 Answer is C