Unit 4 - Week 2 :

Course outline

Assignment 2

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-08-21, 23:59 IST.

1) A Peptide bond is *1 point*

a. rigid with partial double bond character
b. planar
c. covalent
d. all of the above

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
d.

2) The correct sequence of a hexapeptide based on the following data is: *1 point*
Amino acid composition: 2R, A, S, V, Y
Sanger's reagent: DNP-A
Trypsin digest: two peptides (R, A, V) and (R, S, Y)
Carboxypeptidase A digest (specific for C-terminal aromatic or aliphatic amino acid): No reaction
Chymotrypsin digest: Two peptides (A, R, V, Y) and (R, S)

a. A-Y-V-R-S-R
b. A-V-R-Y-S-R
c. A-V-R-Y-R-S
d. A-Y-V-R-R-S

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

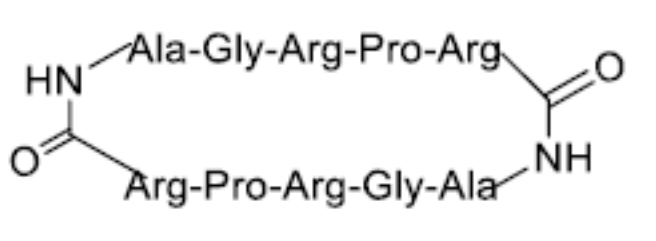
3) For a protein, treatment with Sanger's reagent and subsequent hydrolysis produces DNP-Ala and DNP-Leu in roughly equal amounts. This indicates: *1 point*

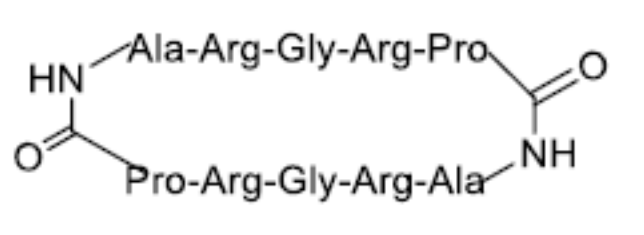
a. The protein is homo-dimeric or dimer of a homo-dimer
b. The protein is hetero-dimeric or dimer of a heterodimer
c. The protein is hydrophobic in nature
d. The protein is cyclic

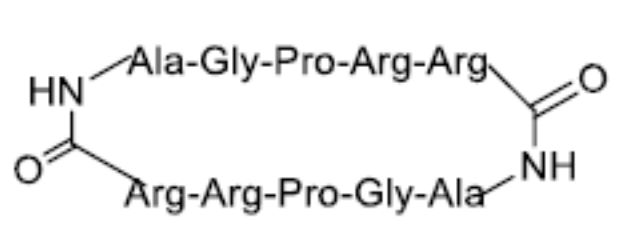
a.
b.
c.
d.

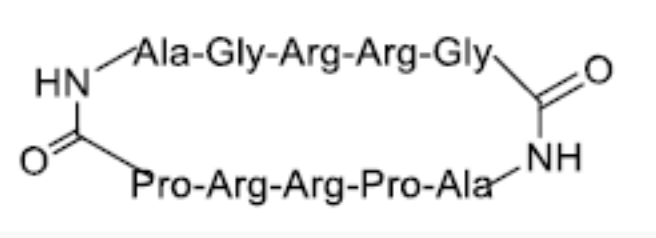
No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

4) A peptide X (MW 1100) failed to react with Edman's reagent. Amino acid analysis gave a composition: Ala, Pro, Gly, Arg_2. The peptide on treatment with Trypsin gave another peptide Y with identical amino acid composition as that of X. Edman degradation of Y gave the following partial sequence: Ala-Gly...The structure of X is *1 point*

a. 

b. 

c. 

d. 

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

Questions 5-8 are based on the following observations

A peptide with 12 amino acids has the following amino acid composition:
Met_2, Tyr, Trp, Glu_2, Lys, Arg, Thr, Asn, Val, Cys

Reaction of the intact peptide with fluorodinitrobenzene followed by acid hydrolysis creates a derivative of Val.

A specific cleavage of the intact peptide produces fragments with the following sequences:
Glu-Cys-Asn-Met-Arg   Met-Glu-Thr-Lys-Trp   Val-Tyr

5) Which reagent was used for the specific cleavage? *1 point*

a. Chymotrypsin
b. Trypsin
c. V8 protease
d. cyanogen bromide

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

6) Which amino acids would be released when the intact peptide was treated first with V8 protease followed by treatment with cyanogen bromide? (V8 protease is specific for hydrolyzing peptide chain at the carboxyl side of acidic amino acid) *1 point*

a. Glu and Met
b. Glu and Arg
c. Met and Arg
d. Glu, Met, and Lys

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.

7) Which treatment would result in the release of Glu from the intact peptide? *1 point*

a. trypsin
b. trypsin followed by dansyl chloride
c. V8 protease followed by chymotrypsin
d. trypsin followed by mild acid

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

8) If this intact peptide is sequenced using the Edman degradation, which step will be part of the procedure? *1 point*

a. The Edman reagent will react with all 12 amino acids simultaneously.
b. Lithium borohydride will react with an α-carboxyl group.
c. Phenylisothiocyanate will react with an α-amino group.
d. Strong acid will be used to cleave off one modified amino acid.

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

Questions 9-12 are based on the following observations

A peptide has the following amino acid composition:
Met_2, Tyr_2, Asp_2, Arg, Lys, Val, Leu, Gly, Ser
Reaction of the intact peptide with dansyl chloride followed by acid hydrolysis creates a derivative of Met.

A specific cleavage of the intact peptide produces fragments with the following sequences:
Fragment A: Asp-Gly-Lys-Tyr
Fragment B: Met-Ser-Leu-Arg
Fragment C: Met-Val-Asp-Tyr

9) Which of the following is in conformity with the above remarks? *1 point*

a. The sequence is: Met-Val-Asp-Tyr-Asp-Gly-Lys-Tyr-Met-Ser-Leu-Arg
b. The sequence is: Met-Ser-Leu-Arg-Met-Val-Asp-Tyr-Asp-Gly-Lys-Tyr
c. The sequence is: Met-Val-Asp-Tyr-Met-Ser-Leu-Arg-Asp-Gly-Lys-Tyr
d. The sequence is: Met-Ser-Leu-Arg-Asp-Gly-Lys-Tyr-Met Val-Asp-Tyr

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

10) Which reagent was used for the specific cleavage? *1 point*

a. cyanogen bromide
b. V8 protease
c. chymotrypsin
d. trypsin

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c.

11) Which one of the following amino acids is most likely to be found on the surface of a globular protein in water? *1 point*

a. Lys, Arg, Asp
b. Val, Lys, Met
c. Met, Gly, Arg
d. Leu, Asp, Val

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
a.

12) Which amino acid would be released if the intact peptide was treated with a combination of trypsin and chymotrypsin *1 point*

a. Lys
b. Tyr
c. Glu
d. Met

a.
b.
c.
d.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b.