

## Unit 5 - Week 3

**Course outline**

How does an NPTEL online course work?

**Week 0 Assignment 0**

**Week 1**

**Week 2**

**Week 3**

- Lecture 05 : Protein Structure III
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- Week 3 Lecture material
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## Week 3 Assignment 3

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

**Due on 2020-02-19, 23:59 IST.**

- 1) Which of the following methods can be used to solve a protein structure? 1 point
- I. X-Ray Crystallography  
II. NMR spectroscopy  
III. Mössbauer spectroscopy
- a) Only I  
b) Only II  
c) II and III  
d) I and II
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
d)
- 2) Levinthal's Protein Folding Paradox concludes that protein folding to its native conformational structure happens – 1 point
- a) by a random search through all of the enormously large number of possible structures.  
b) spontaneously.  
c) by random search through some specific number of possible structure.  
d) after some million years of time.
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b)
- 3) The hydrophathy plot is a graphical display of the local \_\_\_\_\_ of the amino acids side chains in a protein 1 point
- a) hydrophobicity  
b) hydrophilicity  
c) electronegativity  
d) nucleophilicity
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
a)
- 4) In Sliding Window Approach for making a hydrophathy plot for a membrane protein, which of the following statement is **INCORRECT**? 1 point
- a) A small window produces noisier plot.  
b) A small window reflects high local hydrophobicity.  
c) A window of 10 is optimal.  
d) The optimal value of window is in range of 9 to 11.
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c)
- 5) For an  $\alpha$  helix, what would be the number of amino acid residues required to span a membrane of 30 Å? 1 point
- a) 20  
b) 10.4  
c) 18  
d) 5.4
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
a)
- 6) To construct a helical wheel for an  $\alpha$  helix for a specific amino acid sequence, what should be the degree of rotation per amino acid? 1 point
- a) 90  
b) 45  
c) 100  
d) 120
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c)
- 7) Under normal circumstances a protein will not be denatured by 1 point
- a) Sodium dodecyl sulfate (SDS)  
b) Heating to 90°C  
c) Iodoacetic acid  
d) Urea
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c)
- 8) Chou-Fasman parameters are useful in solving which kind of structure of a protein? 1 point
- a) primary structure  
b) secondary structure  
c) tertiary structure  
d) quaternary structure
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b)
- 9) From the given Hydrophathy plot below, which part do you expect to be transmembrane helix/helices? 1 point
- 
- a) A  
b) B  
c) C  
d) A, B and D
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c)
- 10) In a sequence of amino acids, 4 out of 6 amino acids have a Chou-Fasman parameters  $P(a) > 100$ . These sequence of six residues is expected to form – 1 point
- a) an  $\alpha$  helix  
b) a  $\beta$  sheet  
c) a turn  
d) a  $\beta$  sheet or a turn
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
a)
- 11) Collagen is a type of - 1 point
- a) fibrous protein  
b) globular protein  
c) transmembrane protein  
d) cytosolic protein
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
a)
- 12) What is commonly used to disrupt the disulfide bonds in proteins? 1 point
- a) Urea  
b) NaCl  
c) 2-Mercaptoethanol  
d) Ninhydrin
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
c)
- 13) Which of the thermodynamic parameter is destabilizing in nature with respect to protein folding? 1 point
- I.  $\Delta G$   
II.  $\Delta S$   
III.  $\Delta H$
- a) I  
b) II  
c) III  
d) II and III
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b)
- 14) Which of the following energy terms does not contribute to the covalent component of energy in protein structure? 1 point
- a) Stretching energy  
b) Bending energy  
c) Torsional energy  
d) Coulomb energy
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
d)
- 15) A process by which a protein structure assumes its functional shape or conformation is commonly referred to as – 1 point
- a) Denaturation  
b) Folding  
c) Synthesis  
d) Hydrolysis
- a)  
 b)  
 c)  
 d)
- No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
b)