

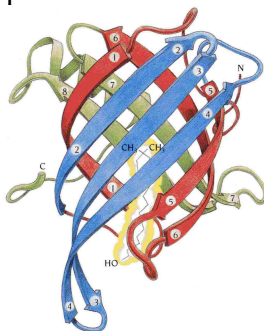
Term Test-2

Answer all questions in the Exam Booklets. Put your name and student number on all exam booklets. Draw **structures** and **diagrams** where appropriate.

The total number of marks is 50 and you have 75 minutes to complete the exam.

Answer ALL questions.

- (8) 1a. Give an **outline** of the steps involved in the solid-phase synthesis of peptides. Molecular structures are required for full marks. You must show the formation of a peptide bond but you need not show any other mechanisms such as amino acid activation.
- (4) 1b. Explain why peptides made by solid-phase synthesis are usually contaminated by “Termination Peptides” and “Deletion Peptides”.
- (4) 1c. What is the main advantage of solid-phase peptide synthesis compared to solution-phase synthesis? What is the benefit of sequential fragment condensation?
- (6) 2. Predict the secondary structure of a protein polymerized from a random mixture of *D*- and *L*- amino acids. Explain your answer.
- (6) 3. Draw the structure of the peptide Tyr-Ala and clearly label the Ala ϕ dihedral angle. Give a definition of the ϕ dihedral angle.
- (12) 4. Explain the packing of α -helices into coiled coil structures. For best results use diagrams!
- (10) 5. With the use of the following diagram describe the structure and function of the retinol-binding protein.

**Bonus Question**

- (2) 6. Draw the structure of the GFP fluorophore.