

Questions 1-16 are multiple-choice. Each is 3 points. Clearly circle correct answer(s) for proper credit.

The remaining questions 17-24 are regular. There are a total of 24 questions. 100 points total.

1. An acid catalyst functions by donating _____ to a substrate

- A. a proton
- B. an electron pair
- C. a nucleophile
- D. an electron
- E. a molecule of water

2. Which of the following amino acids can form a disulfide bridge in peptides?

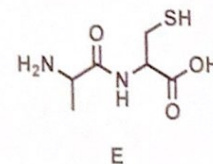
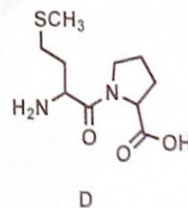
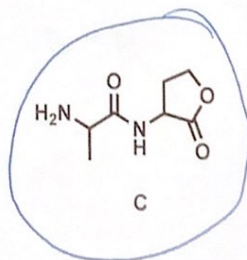
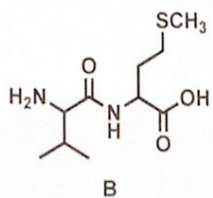
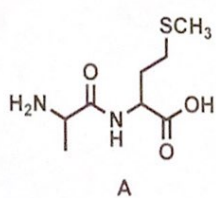
- A. alanine
- B. methionine
- C. tryptophan
- D. cysteine
- E. pyridine

3. The substrate is fully deprotonated before the slow step of the reaction.

This statement best defines:

- A. Nucleophilic catalysis
- B. General base catalysis
- C. Specific base catalysis
- D. Non-specific base catalysis
- E. none of the above

4. What product is formed when Ala-Met-Pro is treated with cyanogen bromide?



XX. Provide the product and the mechanism for the following reaction

