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

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\text{isocitrate} + \text{NAD}^+ \xrightarrow{\text{isocitrate dehydrogenase}} \text{product} + (\text{H}^+)\]