

Imines & Enamines — Practice Worksheet

Name: _____ Date: _____

Directions: Select the best answer for Questions 1–8. For Questions 9–10, explain your reasoning using chemical structures, reagents or electron-flow ideas where useful.

1. A primary amine plus propanone under suitable mildly acidic conditions yields:

- A. An imine
- B. An ester
- C. An epoxide
- D. An alkyl halide

Answer: _____

2. A secondary amine and ketone with an alpha H commonly form:

- A. An enamine
- B. A primary alcohol
- C. An acyl chloride
- D. An alkane

Answer: _____

3. A characteristic imine bond is:

- A. C=O
- B. C=N
- C. O–O
- D. C≡C

Answer: _____

4. An enamine has a prominent structural motif:

- A. C=C–N
- B. C=O–OH
- C. C–Cl
- D. C≡N

Answer: _____

5. What is lost during net formation of a simple imine?

- A. CO₂
- B. Water
- C. Hydrogen chloride only
- D. O₂

Answer: _____

6. Why are very strongly acidic solutions potentially unfavorable for imine formation?

- A. They protonate the amine and decrease nucleophilicity
- B. They create C–C bonds instantly
- C. They remove every oxygen
- D. They make amines more unreactive than acids always

Answer: _____

7. Which additional requirement applies to enamine formation?

- A. An alpha hydrogen
- B. A leaving chloride
- C. A carboxylic acid
- D. An alkene starting material

Answer: _____

8. A primary amine RNH_2 has how many N–H bonds before reaction?

- A. Zero
- B. One
- C. Two
- D. Three

Answer: _____

9. What type of amine typically forms an imine?

10. What structural feature is necessary for enamine formation?
