

Quiz #2

Score: _____

1. As drawn, which functional group has the lowest pKa?

- (A) Alcohol. *pKa 15-18*
 (B) Ammonium group. *pKa 9-12*
 (C) Carboxylate. *no pKa: no proton!*

2. The structure of ATP is shown. What functional group is enclosed by the dotted line marked A?

- (A) A conjugate base related to phosphoric acid
 (B) A phosphate / phosphoric anhydride
 (C) An amide of phosphoric acid (= phosphoramidate)
 (D) A phosphate / phosphoric ester
 (E) An acidic proton on a phosphoric acid derivative

see functional groups handout on web site

3. The structure of ATP is shown. What functional group is enclosed by the dotted line marked B?

- (A) A conjugate base related to phosphoric acid
 (B) A phosphate / phosphoric anhydride
 (C) An amide of phosphoric acid (= phosphoramidate)
 (D) A phosphate / phosphoric ester
 (E) An acidic proton on a phosphoric acid derivative

The 5' hydroxyl of ribose has been esterified to phosphoric acid (or triphosphate if you like)

4. The structure of ATP is shown. Which option below best describes the negatively charged oxygens?

- (A) A conjugate base related to phosphoric acid
 (B) A phosphate / phosphoric anhydride
 (C) An amide of phosphoric acid (= phosphoramidate)
 (D) A phosphate / phosphoric ester
 (E) An acidic proton on a phosphoric acid derivative

5. The pKa of an amine is higher than the pKa of a carboxylic acid.

- (A) True
 (B) False

Technically true, but in H₂O an amine will not act as an acid:

