

Quiz #1

Score: _____

1. Which of the following styles of arrows is used to indicate species that are in equilibrium?

- (A) Choice A (see e-mailed quiz).
- (B) Choice B
- (C) Choice C
- (D) Choice D

please check out
arrows handout
on web site

2. Which of the following chemical species is the strongest acid?

- (A) Choice A (see e-mailed quiz). *pKa 9-12 ammonium salt/ion*
- (B) Choice B — *pKa 4-5 its a carboxylic acid*
- (C) Choice C — *ammonium ion, but no labile H's*

3. Which of the following diagrams depicts a spontaneous reaction?

- (A) Choice A
- (B) Choice B

this has a special meaning
in chemistry, not the usual

4. The quantity indicated by the red arrow is the entropy of the reaction. *day-to-day meaning*

- (A) True
- (B) False

ΔG is indicated

5. A phosphate species is shown. Which carbon-based functional groups are analogous to the functional groups in this species? Mark all that apply.

- (A) amide
- (B) anhydride
- (C) ester
- (D) alcohol
- (E) carboxylic acid

