

St. name:

Instructor: **G. Barghouti**

St. No.:

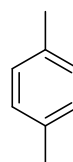
1) What is the IUPAC name of the following compound?

- A) **2-chloro-3-nitroaniline**
 C) 1-amino-2-chloro-3-aniline

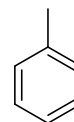
- B) 2-chloro-1-amino-3-aniline
 D) 2-chloro-3-aminoaniline

2) What is the correct assignment of the number of signals in the ^{13}C NMR spectra of the following disubstituted benzene derivatives?

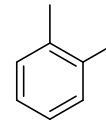
- A) I = 4 signals; II = 3 signals; III = 2 signals.
 B) I = 2 signals; II = 4 signals; III = 3 signals.
 C) I = 6 signals; II = 5 signals; III = 6 signals.
 D) **I = 3 signals; II = 5 signals; III = 4 signals.**



I



II



III

3) Which of the following molecules has the most acidic hydrogen atoms?



I



II



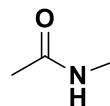
III

- A) **I** B) II C) III D) I, II and III have the same acidic hydrogens

4) Rank the following groups in order of increasing activating strength, listing the least first.

- A) **IV < II < III < I**
 C) IV < II < I < III

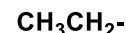
- B) I < III < II < I V
 D) IV < III < II < I



I



II

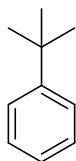
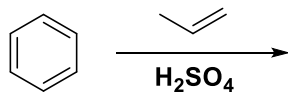


III

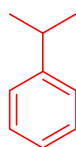


IV

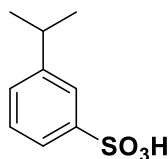
5) What is the major organic product obtained from the following reaction?



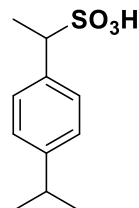
I



II

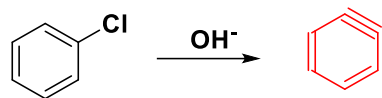


III



IV

6) What is the reactive intermediate formed in the elimination-addition mechanism of nucleophilic aromatic substitution?



7) Label the following compounds as: aromatic, antiaromatic or nonaromatic?

