

Chemistry 2542, Fall 2016

Quiz 4

(30 points)

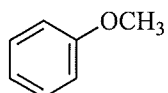
Key

Important notes:

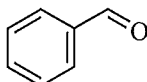
- Please use the provided Scantron form for your answers; you can keep the sheet with the questions and can use it as scratch paper
- Do not forget to write your name on the Scantron form
- You will not receive credit for unmarked answers or for more than one mark on answer line
- Your scores will be posted on eGradebook; graded Scantron forms will not be returned to students.

Questions 1-10: Please mark the appropriate box on the front of the Scantron form (3 pts each).

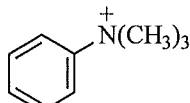
1. Arrange the following compounds according to **decreasing order of reactivity** in an electrophilic aromatic substitution reaction.



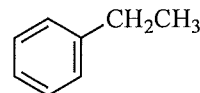
1



2



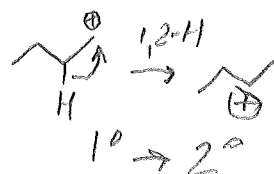
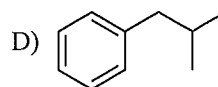
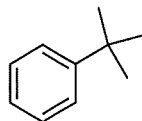
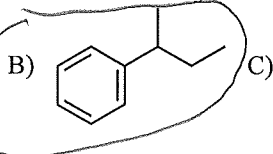
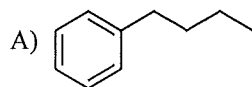
3



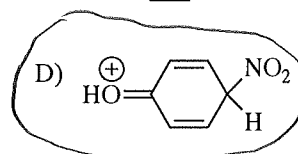
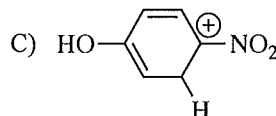
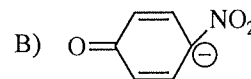
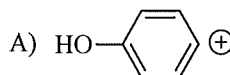
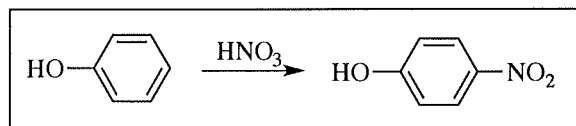
4

- A) 1 (most reactive) > 4 > 2 > 3 B) 4 > 1 > 2 > 3 C) 2 > 3 > 4 > 1 D) 3 > 4 > 2 > 1

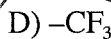
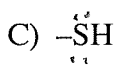
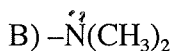
2. Which of the following compounds is a product formed by a **1,2-hydride shift** in the reaction of benzene with 1-chlorobutane and AlCl_3 ?



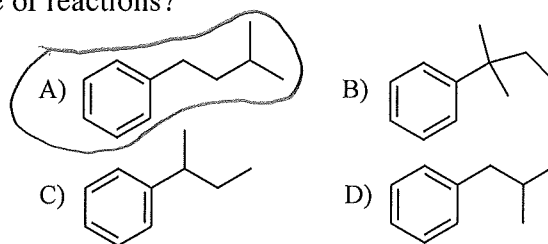
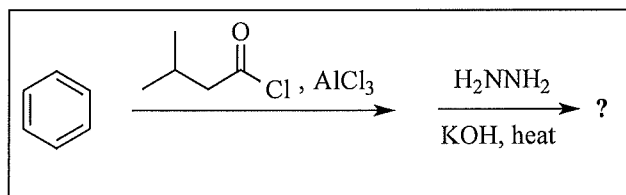
3. Which of the following is a key **intermediate** for the transformation in the box?



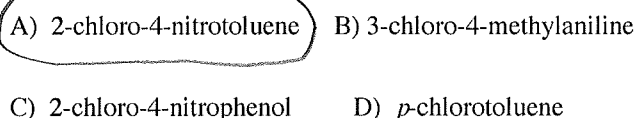
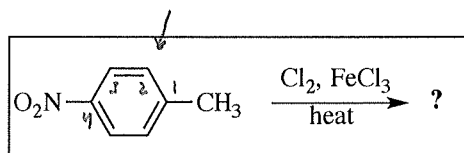
4. Which one of the following groups will be **meta-directing** in the electrophilic aromatic substitution reaction?



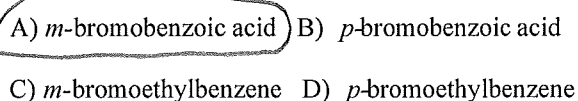
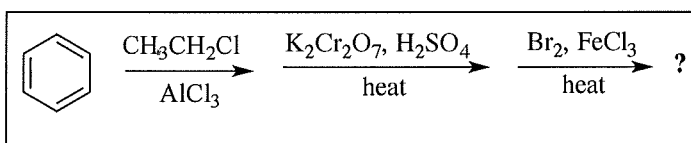
5. What is a major **product** of the following sequence of reactions?



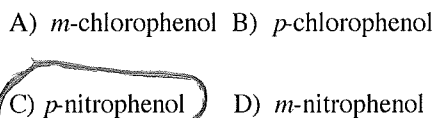
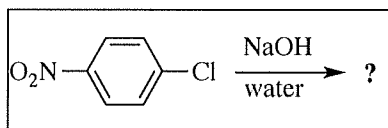
6. What is the name of the **product** formed in the following reaction?



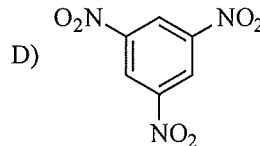
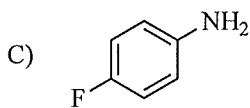
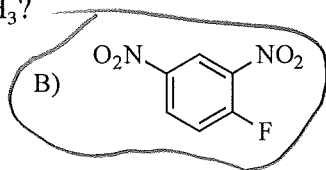
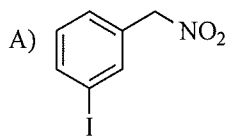
7. What is the name of the **product** formed in the following sequence of reactions?



8. What is the name of the major **product** of the reaction shown in the box?



9. Which one of the following compounds is most reactive towards **nucleophilic aromatic substitution** reaction with NaOCH₃?



10. Which **reagents** can be used for the sequence of reactions shown in the box?

