Name: Date:

Organic Chemistry Cumulative Final NeighborhoodGeeks

1. Order the following compounds in order of acidity (least to greatest)



\_\_\_\_2\_\_\_\_\_ \_\_\_\_4\_\_\_\_\_ \_\_\_3\_\_\_\_ \_\_\_\_1\_\_\_\_

1. Which of the following would be an appropriate name for the below compound?



1. 2-bromo-1-phenylbutane
2. 1-phenyl-2-bromobutane
3. (S)-1-phenyl-2-bromobutane
4. (R)-1-phenyl-2-bromobutane
5. (S)-2-bromo-1-phenylbutane
6. (R)-2-bromo-1-phenylbutane
7. Order the following compounds from least to greatest reactivity to nucleophiles



 \_\_\_\_\_\_5\_\_\_\_\_\_ \_\_\_\_4\_\_\_\_\_\_\_\_ \_\_\_\_1\_\_\_\_\_ \_\_\_\_\_\_2\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_3\_\_\_\_\_

1. Which of the following compounds cannot be made by reacting a carbonate with a Grignard:



1. Which of the following compounds would react the fastest with NaOH:



1. What would be the major organic product for the following reaction:



A. 

B. 

C. No Reaction

D. 

1. Which of the following is has to be true of an optically active compound?
2. The compound has a plane of symmetry
3. The compound rotates plane-polarized light
4. The compound can be superimposed on its mirror image
5. The compound has a point of inversion
6. Which of the following is true about an SN2 reaction?
7. It occurs via a concerted mechanism
8. The rate is independent of alkyl halide concentration
9. The rate is independent of nucleophile concentration
10. Both B and C
11. If 1-bromobutane is reacted with NaOH and the volume of solution doubles, what effect would this change have upon the initial reaction rate?
12. It would cause the rate to double
13. The rate would quadrupole
14. The rate would be unchanged
15. The rate would be halved
16. The rate would be a quarter of its initial rate
17. Which of the following compounds would be most reactive towards Electrophilic Aromatic Substitution reactions?



1. What would be the major organic product for the following reaction:



1. 
2. 
3. 
4. 
5. Which of the following reactions are exclusively *syn* additions:
6. Reaction of alkenes with MCPBA
7. Reaction of alkenes with H2 and Lindlar’s Catalyst
8. Reaction of alkenes with Na, NH3(l) at low temperatures
9. Both A and B
10. Which of the following is the strongest acid:



1. Which of the following reagents would be the strongest nucleophile in DMSO?
2. NaOH
3. NaOC(CH3)3
4. NaSH
5. NaNH2
6. What would be the major organic product of the following reaction:



1. 
2. 
3. 
4. No Reaction
5. Which of the following is (are) a diastereomer(s) of



1. 
2. 
3. 
4. 
5. A and C
6. Which of the following alkenes would react fastest with HBr:



1. Which of the following species would react fastest with Br2 and hν:



1. Which of the following monomer units can be used to prepare the following polymer:



1. Vinyl acetate
2. Vinyl propionate
3. Allyl acetate
4. Methacrylate
5. Which of the following monomer units can be used to prepare Kevlar (structure shown below):



1. 
2. 
3. 
4. None of the above
5. What would be the major organic product of the following reaction:



1. 
2. 
3. 
4. 
5. Which of the following reactions will result in a *cis* 1,2-diol?
6. Reaction of an alkene with MCPBA followed by attack with hydroxide
7. Reaction of an alkene with OsO4 in peroxide
8. Reaction of an alkene with Ozone in dimethylsulfide
9. Reaction of a Grignard with an ester
10. What would be the major organic product in the following reaction:



1. 
2. 
3. 
4. 
5. What is the IUPAC name for the following compound:



1. (E)-2-bromo-3-hexene
2. (Z)-2-bromo-3-hexene
3. (E)-5-bromo-3-hexene
4. (Z)-5-bromo-3-hexene
5. What is the IUPAC name for the following compound:



1. 2-ethyl-4-bromo-1-aminobenzene
2. *p*-bromo-*o*-ethylnitrobenzene
3. 4-bromo-2-ethylaniline
4. *p-*bromo-*o*-ethylaniline
5. What is the IUPAC name for the following compound:



1. 2,6-dinitrotoluene
2. Di-*o*-nitrotoluene
3. 1,5-dinitrotoluene
4. None of the above
5. What is the IUPAC name for the following compound:



1. N-(4-iodophenyl)ethanamide
2. 4-iodobenzamide
3. N-(*p*-iodobenzyl)ethanamide
4. None of the above
5. What is the structure of (2S,3R)-2-bromo-3-chlorobutane?
6. 
7. 
8. 
9. 
10. What would be the major organic product for the following reaction sequence:



1. 
2. 
3. 
4. 
5. Which of the following compound(s) is (are) aromatic:



1. Which of the following compound(s) is (are) aromatic:



1. Which of the following is the strongest acid:



1. Which of the following has exactly 3 chiral centers:



1. What would be the major organic product of the following reaction sequence:



1. 
2. 
3. 
4. 
5. What would be the major organic product of the following reaction sequence:



1. 
2. 
3. 
4. 
5. What would be the major organic product of the following reaction sequence:



1. 
2. 
3. 
4. 
5. What would be the major organic product from the following reaction:



1. 
2. 
3. 
4. 
5. What would be the major organic product of the following reaction sequence:



1. 
2. 
3. 
4. 
5. Which of the following compounds could have produced the following IR spectrum:



1. Which of the following compounds would have the largest lambda max in its UV-Visible Spectrum?



1. How many signals would the following compound produce in 1H NMR?



1. 4
2. 5
3. 6
4. 7
5. How many signals would the following compound produce in 1H NMR?



1. 2
2. 3
3. 4
4. 5
5. How many signals would the following compound produce in 1H NMR?



1. 6
2. 7
3. 8
4. 9
5. What would be the major product in the following reaction sequence:



1. 
2. 
3. 
4. 
5. What would be the major organic product from the following reaction sequence:



1. 
2. 
3. 
4. None of the above
5. What would be the major organic product of the following reaction:



1. 
2. 
3. 
4. 
5. What would be the major organic product from the following reaction sequence:



1. 
2. 
3. 
4. 
5. Which of the following types of reagents will not add to an alpha-beta unsaturated ketone at the beta carbon?
6. Cyanide anion
7. Enamine
8. Grignard
9. Organocuperate
10. A Robinson Annulation can be thought of as \_\_\_\_\_ followed by \_\_\_\_\_\_\_:
11. Michael addition, aldol condensation
12. Aldol addition, aldol condensation
13. Michael condensation, aldol addition
14. None of the above
15. What is the major organic product of the following reaction sequence:



1. 
2. 
3. 
4. 
5. What would the major organic product in the following reaction sequence:



1. 
2. 
3. 
4. 
5. Which of the following Newman projections represents the most stable conformation of 2,3-dimethylpentane along the C2 and C3 carbons:
6. 
7. 
8. 
9. 