

淡江大學九十三年年度碩士班招生考試試題

系列：化學學系

科目：有機化學

准帶項目請打「○」否則打「×」

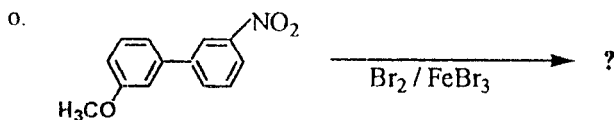
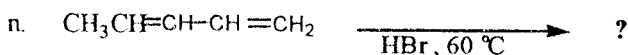
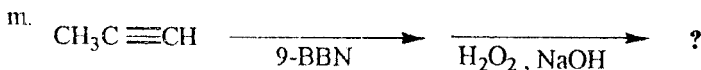
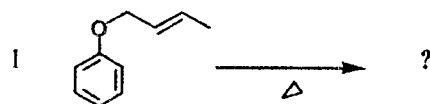
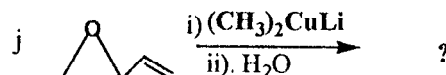
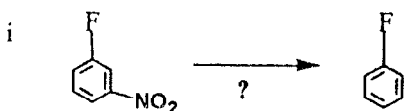
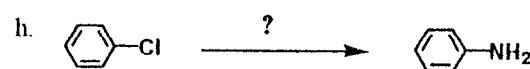
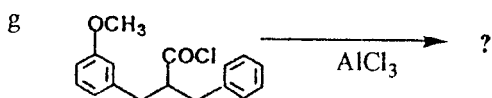
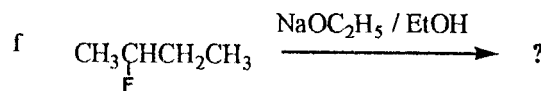
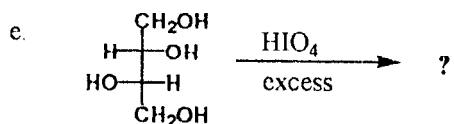
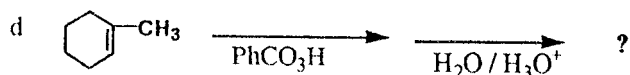
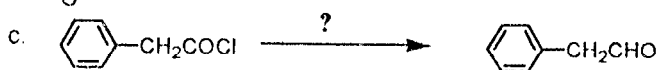
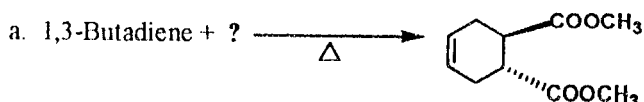
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本試題雙面印製

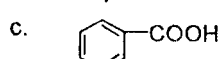
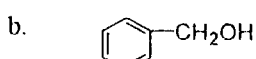
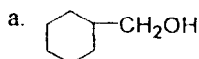
1. Provide the major organic products or missing reagents for each of the following reactions.



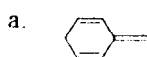
2. Identify all the C_7H_{16} hydrocarbons that have three peaks in their decoupled C-13 NMR spectra.

3. (A) Which of the following compounds will show IR absorption at $1670\sim 1690\text{ cm}^{-1}$? 6%

(B) Which of the following compounds will show no absorption at $3000\sim 3100\text{ cm}^{-1}$? 3%



4. Which one of the following compounds will absorb at longer wavelength in UV region?



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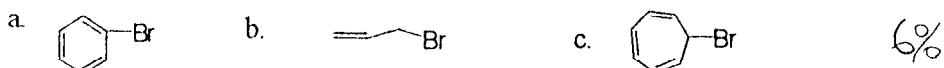
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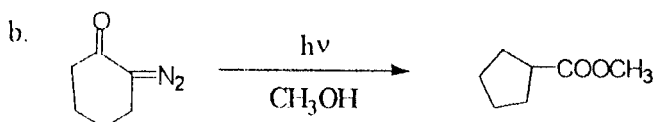
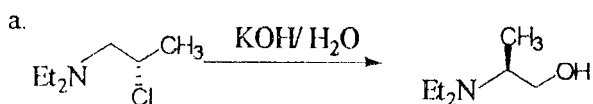
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本試題共 2 頁

5. Which of the following bromides would ionize most rapidly to form a carbocation?
Justify your answer.



6. Provide the mechanism for each of the following transformations 10%



7. Rank the following compounds in order of reactivity toward esterification with C_2H_5OH .



8. Which one of the following compounds is more polar? Also give your reasons.



9. (a). Which of the following two structures in the following pairs is more stable?

(b). Indicate which is cis fused ring?



10. (a). For the Lewis structure of carbon monoxide shown below, predict the direction of the dipole moment in this Lewis structure.



(b). As it has shown above that carbon monoxide should have a substantial dipole moment. In fact, the experimentally determined dipole moment is very small, 0.11 D. Draw a second resonance structure for carbon monoxide to rationalize the observation.

5%