

1. Which one of the following reagents would best effect the conversion shown?

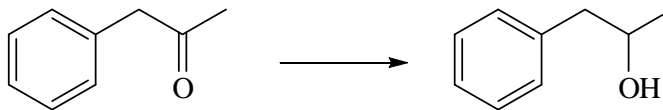
a) H_2 / Pd catalyst

b) LiAlH_4 followed by $\text{H}^+/\text{H}_2\text{O}$

c) $\text{Cr}_2\text{O}_7^{2-}/\text{H}^+$

d) conc. H_2SO_4

e) dilute OH^-



2. What are the major products from the hydrolysis of $(\text{CH}_3\text{CO})_2\text{O}$ under basic conditions?

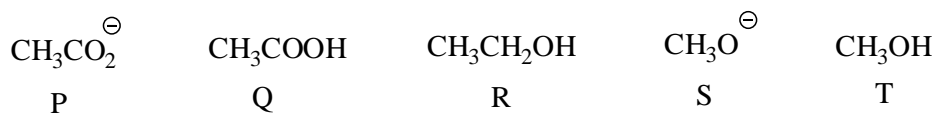
a) P and R

b) P only

c) Q and T

d) P and S

e) Q only



3. Which one of the following reagents would best effect the conversion shown?

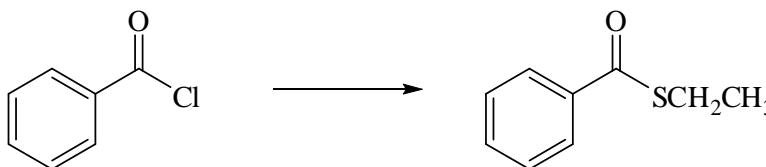
a) $\text{CH}_3\text{CH}_2\text{COSH}$

b) H_2S

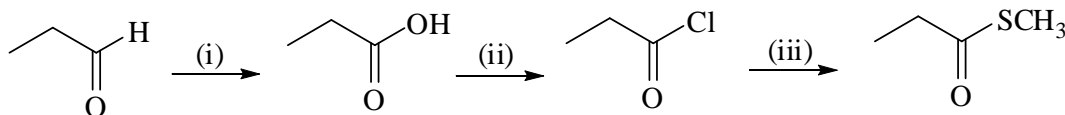
c) $\text{CH}_3\text{CH}_2\text{SH}$

d) CH_3SH

e) $\text{CH}_3\text{CH}_2\text{SCH}_2\text{CH}_3$



4. The reagents and reaction conditions to carry out the transformations below are:



a) (i) LiAlH_4 followed by dilute acid (ii) SOCl_2 (iii) CH_3SCH_3

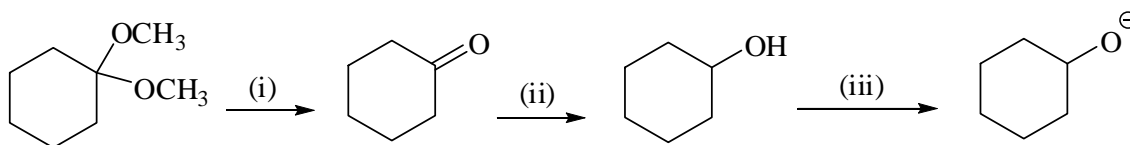
b) (i) $\text{Cr}_2\text{O}_7^{2-}/\text{H}^+$ (ii) HCl (iii) HSCH_3

c) (i) $\text{Cr}_2\text{O}_7^{2-}/\text{H}^+$ (ii) SOCl_2 (iii) $\text{CH}_3\text{S}-\text{SCH}_3$

d) (i) LiAlH_4 followed by dilute acid (ii) HCl (iii) CH_3SBr

e) (i) $\text{Cr}_2\text{O}_7^{2-}/\text{H}^+$ (ii) SOCl_2 (iii) HSCH_3

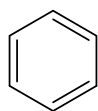
5. The reagents and reaction conditions to carry out the transformations below are:



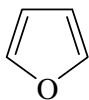
- a) (i) $\text{OH}^-/\text{H}_2\text{O}$ (ii) LiAlH_4 followed by dilute acid (iii) $\text{OH}^-/\text{H}_2\text{O}$
 b) (i) $\text{OH}^-/\text{H}_2\text{O}$ (ii) $\text{Cr}_2\text{O}_7^{2-}/\text{H}^+$ (iii) $\text{OH}^-/\text{H}_2\text{O}$
 c) (i) conc. H_2SO_4 (ii) dilute H_2SO_4 (iii) $\text{OH}^-/\text{H}_2\text{O}$
 d) (i) $\text{H}^+/\text{H}_2\text{O}$ (ii) $\text{Cr}_2\text{O}_7^{2-}/\text{H}^+$ (iii) NaNH_2
 e) (i) $\text{H}^+/\text{H}_2\text{O}$ (ii) LiAlH_4 followed by dilute acid (iii) NaNH_2

6. Which of the following compounds is/are aromatic?

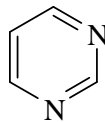
- a) W, X, Y
 b) W, Y
 c) W
 d) W, Z
 e) X, Z



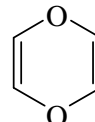
W



X

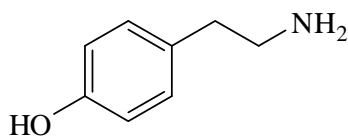


Y

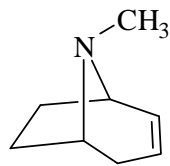


Z

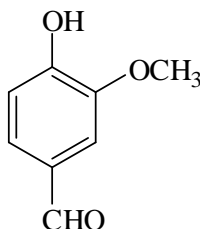
Q 7-10 refer to the following four molecules.



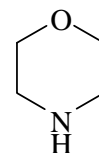
tyramine



tropidene



vanillin



morpholine

7. Which of the compounds will undergo an acid-base reaction with dilute HCl?

- a) tyramine and tropidene only
 b) tyramine, tropidene and morpholine only
 c) tyramine only
 d) tropidene only
 e) all of them

8. Which of the compounds will undergo an acid-base reaction with dilute NaOH?

- a) tyramine and vanillin only
 b) tyramine, vanillin and morpholine only
 c) tyramine only
 d) vanillin only
 e) none of them

9. Which of the compounds will undergo an addition reaction and decolourise bromine water?

- a) morpholine only
 b) tyramine and vanillin only
 c) tropidene only
 d) all of them
 e) none of them

10. Which of the compounds will react (effervesce or bubble) when treated with dilute NaHCO_3 solution?

- a) morpholine only
 b) tyramine and vanillin only
 c) tropidene only
 d) all of them
 e) none of them

Correct answers: 1B, 2B, 3C, 4E, 5E, 6A, 7B, 8A, 9C, 10E