## **Assignment**

## Reagent (2)

## **Grignard Reagents**

- $CH_3CH_2CH CH_3 \xrightarrow{Mg} A \xrightarrow{H_2O} B$ . The product B is 1.
  - ÓН
- $CH_3CH_2CH_2 \xrightarrow{Mg} A \xrightarrow{CH_3NH_2} B$ 2.

The product B is

(a) CH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>

- (c) CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>
- (b) CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>NHCH<sub>3</sub> (d) CH<sub>3</sub>CH<sub>2</sub>CH<sub>2</sub>MgBr
- $CH_{3}CH_{2}COCH_{2}CH_{3} \xrightarrow{\text{(i) } CH_{3}MgBr} A \quad C_{q}H_{r}O_{s} \text{ The sum of q, r, s is}$ 3.
- $CH_3CH_2CH_2CHO \xrightarrow{1. Ph-MgBr} B$ . The DOU of product B is\_ 4.
- Which of the following tertiary alcohols can be prepared from the reaction of an ester with excess 5. grignard reagent?

OH
(a) 
$$CH_3 - C - CH_3$$
(b)  $CH_3CH_2 - C - CH_2 - CH_2CH_3$ 
(c)  $CH_3 - C - CH_2CH_2CH_3$ 
(d)  $CH_3CH_2CH_3$ 
(e)  $CH_3CH_2CH_3$ 
(d)  $CH_3CH_2CH_3$ 
(e)  $CH_3CH_3CH_3$ 
(f)  $CH_3CH_3CH_3$ 
(h)  $CH_3CH_3$ 

- Which of the following secondary alcohols can be prepared from the reaction of methyl formate 6. with excess grignard reagent
  - (a)  $CH_3CH_2CH_3$  (b)  $CH_3CHCH_3$  (c)  $CH_3CHCH_2CH_2CH_3$  (d)  $CH_3CH_2CH_2CH_3$ ÓН ÓН ÓН
- 7. Which of the following compounds will not undergo a nucleophilic addition reaction with a grignard reagent?
  - (A)  $CH_3CH_2 C NHCH_3$  (B)  $CH_3CH_2COOCH_3$  (C)  $HOCH_2CH_2 C OCH_3$ (a) A (b) B (d) D

- 8. Compound A and D do not give positive tollens tests however, compound C does,
  - $4-Bromobutanal \xrightarrow{HOCH_2CH_2OH,\ HA} A \xrightarrow{Mg,\ Et_2O} B \xrightarrow{1.\ CH_3CHO} C \xrightarrow{CH_3OH} C_{7H_nO_m}$

The value of n & m in  $C_7H_nO_m$  are\_\_\_\_\_

- 9.  $\underbrace{\frac{\text{EtMgBr}}{\text{Et}_2\text{O}}}_{\text{H}} A \xrightarrow{\text{1. CH}_2\text{O}} \text{B} \text{. No. of C=C bond in product B are} \underline{\qquad}.$
- 10.  $\xrightarrow{\text{Br}} \xrightarrow{\text{Mg} \atop \text{drt Et}_2O} A \xrightarrow{\text{CO}_2} B \xrightarrow{\text{H}_3O^+} C$ . The structure of C is

(a) 
$$COOH$$
 (b)  $COOH$  (c)  $COOH$  (d)  $COOH$ 

- 11.  $\xrightarrow{\text{Mg} \atop \text{dry Et}_2\text{O}} A \xrightarrow{\text{1. CO}_2 \atop \text{2. H}_3\text{O}^+} B . \text{ The structure of B is }$ 
  - (a) (b) (c) (d) COOH

    COOH

    CI  $\xrightarrow{Mg} X \xrightarrow{1. CH_2O} Y$ . The structure of Y is
  - $(a) \bigcirc OH \qquad (b) \bigcirc OH \qquad (c) \bigcirc O$
- 13.  $\overbrace{\qquad \qquad } \xrightarrow{1. i-Pr MgBr} A. \text{ The structure of A is}$

12.

- 14. CHO  $\xrightarrow{\text{1. MeMgCl}}$  A . The structure of A is
- 15.  $\frac{1}{2. \text{ H}_3\text{O}^+} \text{ A. The structure of A is}$

## ANSWER KEY

- 1. a 2. a 3. 21 4. 4 5. a,d 6. b,d 7. a,c,d
- 8. 14,2 9. 2 10. a 11. a 12. a 13.
- 14. Me 15. HO OH