

(FINAL Organic)

1-

1

Which statement is true for SN2 reactions? *
(1 Point)

- The mechanism is a two-step process.
- The rate of reaction is dependent only on substrate.
- Substitution occurs with inversion of configuration.
- The fastest reaction will occur with a tertiary halide
- The rate of the reaction is dependent on the stability of a carbocation

2-Which reagent would you choose for the following reaction?

$\text{CH}_3\text{CH}_2\text{CH}_2\text{Br} \rightarrow \text{CH}_2=\text{CH}_2$

- OH
- $\text{CH}_3\text{CH}_2\text{O}$
- $(\text{CH}_3)_2\text{CO}$
- CH_3O
- SH

3-Which of the following is an incorrect representation of relative nucleophile strength?

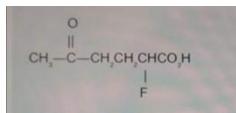
- $\text{CH}_3\text{O}^- > \text{CH}_3\text{OH}$
- $\text{H}_2\text{C}^- > \text{HO}^-$
- $\text{HS}^- > \text{HO}^-$
- $\text{H}_2\text{N}^- > \text{F}^-$
- $\text{Br}^- > \text{I}^-$

4-what is the leaving group in the following reaction?

$\text{CH}_3\text{O}^- \text{Na}^+ + \text{CH}_3\text{CH}_2\text{Br} \rightarrow$
 $\text{CH}_3\text{O}-\text{CH}_2\text{CH}_3 + \text{Br}^- + \text{Na}^+$

- Br
- $\text{CH}_3\text{O}^- \text{Na}^+$
- $\text{CH}_3\text{O}-\text{CH}_2\text{CH}_3$
- Na^+
- $\text{CH}_3\text{CH}_2\text{Br}$

5-Name the following compound



- 6-carboxy-5-fluoro-2-hexanone
- 2-fluoro-5-oxohexanoic acid
- 5-fluoro-2-oxohexanoic acid
- 3-fluoro-6-oxoheptanoic acid
- 1-carboxy-3-fluoro-5-hexanone

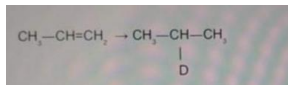
6-

6

Which of the following is protic solvent? *
(1 Point)

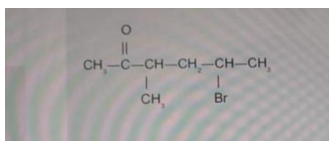
- Methanol, CH_3OH
- acetonitrile, CH_3CN
- dimethyl sulfoxide, $(\text{CH}_3)_2\text{S=O}$
- acetone, $(\text{CH}_3)_2\text{C=O}$
- dimethylformamide, $(\text{CH}_3)_2\text{NCHO}$

7-Which would be the best way to carry out the following synthesis?



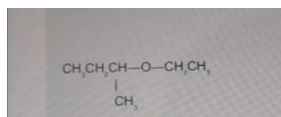
- (1) H_2O / H^+ (2) Mg , ether (3) D_2O
- (1) D_2O (2) Br_2 , AlBr_3
- (1) D_2O (2) Mg , ether
- (1) Br_2 (2) Mg , ether (3) D_2O
- (1) HBr (2) Mg , ether (3) D_2O

8-What is the IUPAC name for the following molecule?



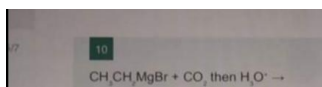
- 2-bromo-4-methyl-5-hexanone
- 1-bromo-1,3-dimethyl-4-pentaneone
- 5-bromo-3-methylhexanone
- 5-bromo-3,5-dimethyl-2-pentaneone
- 5-bromo-3-methyl-2-hexanone

9-What is the IUPAC name for the following molecule?



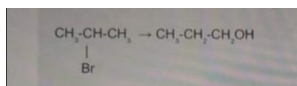
- ethyl isobutyl ether
- 2-ethoxybutane
- butyl ethyl ether
- 3-ethoxybutane
- 3-ethoxy-3-methylpropane

10-



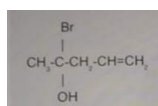
- $\text{CH}_3\text{CH}_2\text{OH}$
- $\text{CH}_3\text{CH}_2\text{CH}_3$
- $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$
- CH_3COOH
- $\text{CH}_3\text{CH}_2\text{COOH}$

11-which would be the best way to carry out the following synthesis?



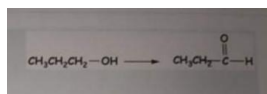
- H_3O^+ , H_2O , heat
- (1) $(\text{CH}_3)_2\text{CO}$ (2) H_3O^+ , then H_2O , heat
- (1) H_2O , heat (2) H_3O^+ , H_2O , heat
- (1) $(\text{CH}_3)_2\text{CO}$ (2) BH_3 , then H_2O , OH^-
- (1) H^+ , heat (2) H_3O^+ , H_2O , heat

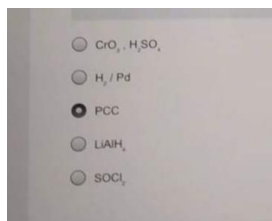
12-the correct IUPAC name for the following molecule?



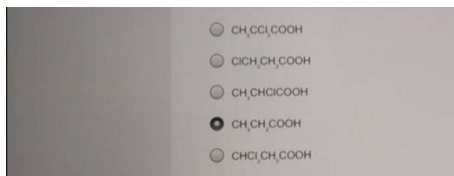
- 4-bromo-1-penten-2-ol
- 4-hydroxy-4-bromo-1-pentene
- 2-bromo-4-penten-2-ol
- 4-bromo-1-penten-4-ol
- 4-penten-2-bromo-2-ol

13- Which reagent will accomplish the following transformation?

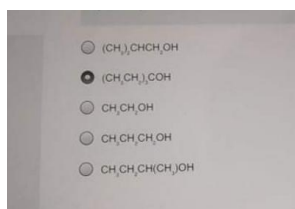




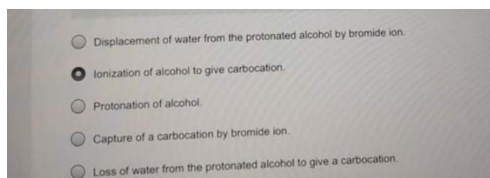
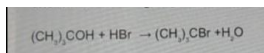
14-Which of the following is the weakest acid?



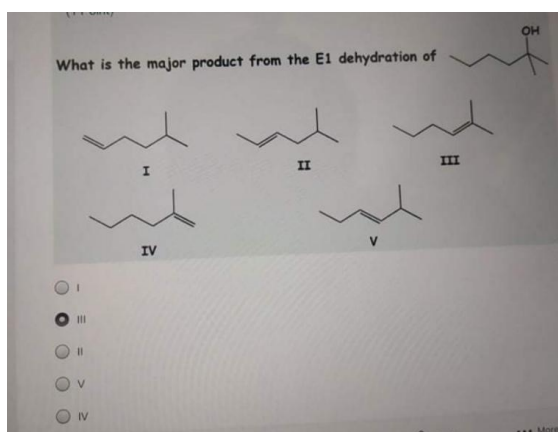
15- Which of the following alcohols would react most rapidly under SN1 conditions?



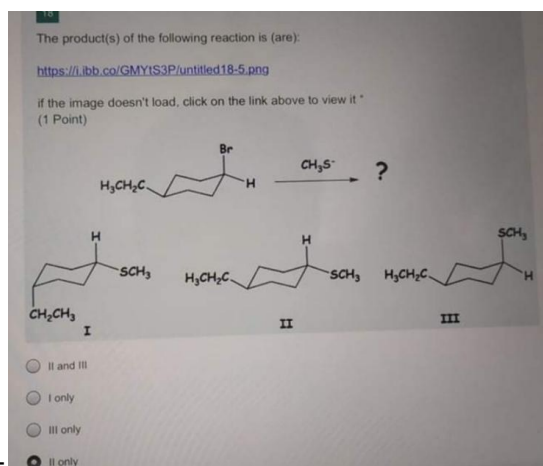
16-the rate determining step in the following reaction is?



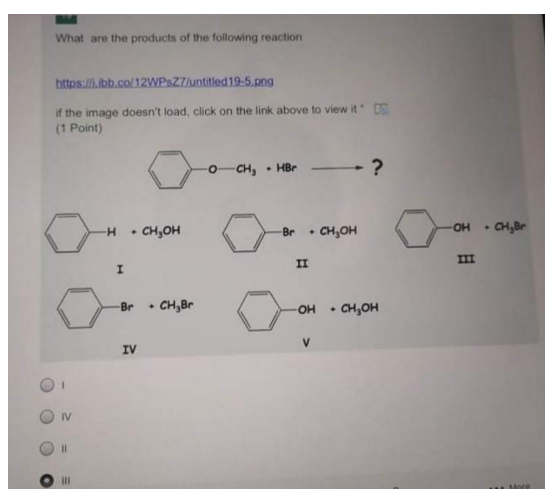
17-



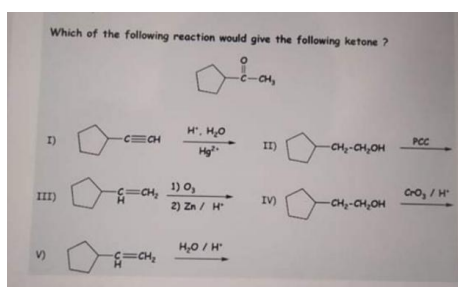
18-



19-

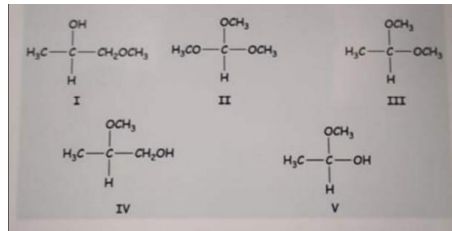


20-



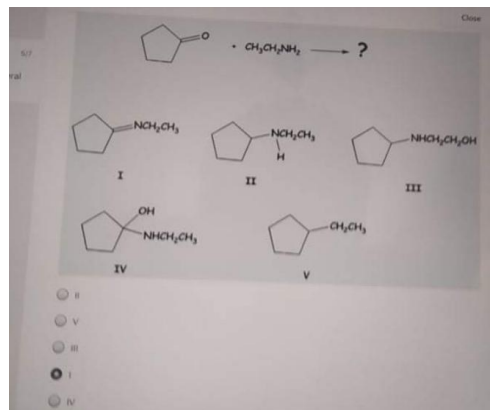
- A,,,1
 B,,,2
 C,,,3
 D,,,4
 E,,,4

21-Which of the following is hemiacetal??

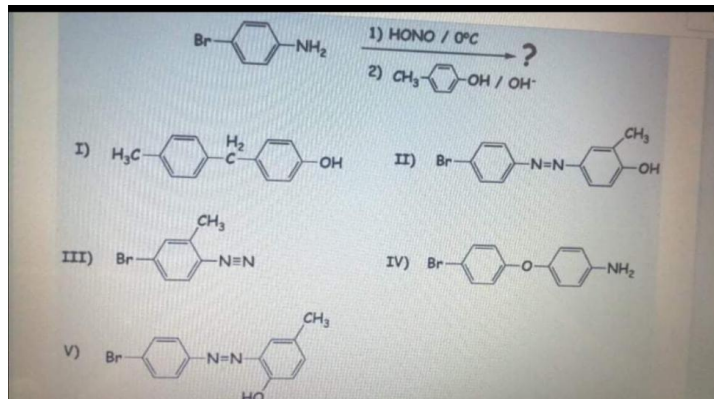


- A,,, 1
 B,,,, 2
 C,,, 3
 D,,,, 4
 E,,,, 5

22-

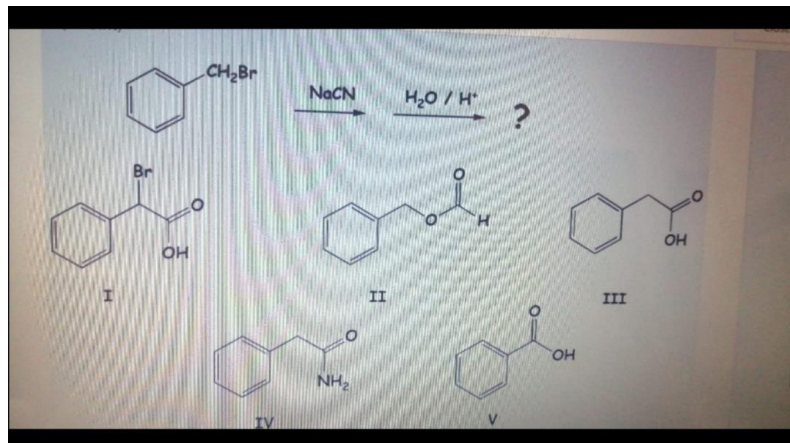


23-



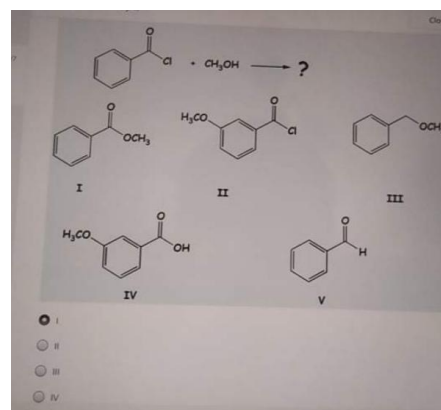
- A,,, 1
 B,,,, 2
 C,,,, 3
 D,,,, 4
 E,,,, 5

24-



- A,,, 1
- B,,,, 2
- C,,,, 3
- D,,,, 4
- E,,,, 5

25-



Don't give up.... 