QUESTION 1
What are the best reagents/conditions to perform the following simple synthesis?

A → B

1. NBS/hν
2. K⁺ -O-t-Bu
3. Br₂
4. Excess NaNH₂
5. H₂O
6. HgSO₄/H₂SO₄/H₂O

C

1. 2 Equiv. HBr
2. K⁺ -O-t-Bu
3. 2 Equiv. HBr
4. Excess NaNH₂
5. H₂O
6. HgSO₄/H₂SO₄/H₂O

D

1. Br₂/hν
2. Na⁺ -OMe
3. Br₂
4. Excess NaNH₂
5. H₂O
6. HgSO₄/H₂SO₄/H₂O

O
**QUESTION 2**

**MC28s**

Give the product of the following reaction

\[
\text{Na}^+ \quad 1. \quad \begin{array}{c}
\text{Ph} \\
\equiv \\
\equiv
\end{array} \\
\quad \text{O} \\
\quad \rightarrow \\
\quad ???
\]

2. \( \text{H}_3\text{O}^+ \)

A  \quad \text{Ph} \equiv \\
\quad \text{HO}

C  \quad \text{Ph} \equiv \\
\quad \text{OH}

B  \quad \text{Ph} \equiv \\
\quad \text{OH}

D  \quad \text{Ph} \equiv \\
\quad \text{OH}

**QUESTION 3**

**MC28y**

Give the product of the following reaction

\[
\text{Na}^+ \quad 1. \quad \begin{array}{c}
\text{CH}_3 \\
\equiv \\
\equiv
\end{array} \\
\quad \text{O} \\
\quad \rightarrow \\
\quad ???
\]

2. \( \text{H}_3\text{O}^+ \)

A  \quad \text{CH}_3 \equiv \\
\quad \text{HO}

C  \quad \text{CH}_3 \equiv \\
\quad \text{OH}

B  \quad \text{CH}_3 \equiv \\
\quad \text{OH}

D  \quad \text{CH}_3 \equiv \\
\quad \text{OH}
**QUESTION 4**
Which will be the product of the following reaction sequence?

\[
\begin{align*}
&\text{3-methylpent-1-ene} \\ &\quad \text{1. Br}_2/\text{CCl}_4 \quad \text{MC28l} \\ &\quad \text{2. Excess NaNH}_2 \\ &\quad \text{3. H}_2\text{O} \\ &\quad \text{4. HgSO}_4/\text{H}_2\text{SO}_4/\text{H}_2\text{O}
\end{align*}
\]

\[\text{OH} \quad \text{O} \quad \text{OH} \quad \text{OH} \]

A B C D

**QUESTION 5**
Which represents the best synthesis of \( Y \) from \( X \)?

\[
X \quad \longrightarrow \quad Y
\]

\[
\begin{array}{c|c|c|c}
\text{A} & \text{B} & \text{C} & \text{D} \\
1. \text{Br}_2/hv & 1. \text{Br}_2/hv & 1. \text{Br}_2/hv & 1. \text{Br}_2/hv \\
2. \text{HC≡C}^- + \text{Na} & 2. \text{Na}^+ - \text{OMe} & 2. \text{t-BuO}^- + \text{K} & 2. \text{t-BuO}^- + \text{K} \\
3. \text{NBS}/hv & 3. \text{HBr}/\text{ROOR} & 3. \text{HBr}/\text{ROOR} & 3. \text{NBS}/hv \\
4. \text{HC≡C}^- + \text{Na} & 4. \text{HC≡C}^- + \text{Na} & 4. \text{HC≡C}^- + \text{Na} & 4. \text{HC≡C}^- + \text{Na} \\
5. \text{H}_2/\text{Pd/C} & 5. \text{Na}/\text{NH}_3(\text{l}) & 5. \text{H}_2/\text{Lindlar} & 5. \text{Na}/\text{NH}_3(\text{l})
\end{array}
\]
QUESTION 6
MC28o

Which of the following reactions will make the bond indicated by the dashed line?

A

\[ \text{A} \quad \text{C} \]

1. \[ \text{C} \quad \text{D} \]

1. \[ \text{B} \quad \text{D} \]

2. \[ \text{B} \quad \text{D} \]

\[ \text{1. } \text{O} \quad \text{Ph} \]

\[ \text{2. } \text{H}_3\text{O}^+ \]

\[ \text{1. } \text{H} \quad \text{Ph} \]

\[ \text{2. } \text{H}_3\text{O}^+ \]

\[ \text{1. } \text{Br} \quad \text{Ph} \]

\[ \text{2. } \text{H}_3\text{O}^+ \]

QUESTION 7
MC28e

Which is the correct IUPAC name for the following structure?

\[ \text{Br} \]

A. (2R)-bromo-(3R)-methyl(oct-(5Z)-en-7-yne

B. (7S)-bromo-(6S)-methyl(oct-(3Z)-en-1-yne

C. (2S)-bromo-(3S)-methyl(oct-(5E)-en-7-yne

D. (7R)-bromo-(6R)-methyl(oct-(3Z)-en-1-yne
QUESTION 8
MC28i
Which best describes the products of the following reaction sequence? Stereochemistry is ignored in this problem.

1. 1 Equiv. HCl
2. 1 Equiv. HI
3. H₂/Pd/C
4. 1 Equiv. K⁺ –O-t-Bu
5. HBr/ROOR

A  B  C  D

Br  Br  Cl  Cl
Cl  Cl  Br  Br

QUESTION 9
There are NO INCORRECT answers to this question, ALL answers to this question will be considered correct for grading purposes.

What overall final grade do you expect to earn in this class?
A  B  C  D

QUESTION 10
There are NO INCORRECT answers to this question, ALL answers to this question will be considered correct for grading purposes.

How hard did you work on organic chemistry this week (not including watching/attending lectures)
A  Very Hard
B  Hard
C  Somewhat Hard
D  Not very Hard this week